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# MARINE CORPS 1983 CONCEPTS AND ISSUES



SEPTEMBER 1983 EDITION



### Introduction

Concepts & Issues is a ready reference on subjects affecting the future of the Marine Corps. The papers, divided into nine subject areas, were written by the Headquarters staff in preparation for POM 85. This edition is not all-inclusive, and much of the information is time-sensitive. Although Concepts & Issues does not express official Marine Corps doctrine, it does address a cross section of the USMC issues that will shape future structure and capability. This is an internal document designed to aid the Headquarters Staff in evaluating programs and in anticipating future requirements. I hope that this book will be useful in your endeavors.



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## SECTION I

### THE FLEET MARINE FORCE

This section presents papers dealing with Fleet Marine Force (FMF) capabilities, organization, current commitments, and future development. The first, "The USMC in the National Security Act" provides a framework within which to fit the subsequent topics. "Marine Corps Tactical Force Organization" and "Contingency Response" summarize the organization and current commitments of the operating forces including forward afloat deployments, air contingency forces, and command relationships. "Fleet Marine Forces as an Instrument of U.S. Policy" proposes a return to a primarily maritime national strategy and postulates a strengthened role for USMC forces as critical to its execution. Finally, the paper entitled "The U.S. Marine Corps as a Part of the Total Capability" presents a framework of issues which compare current force reality against probable mid-range capability.



## THE USMC IN THE NATIONAL SECURITY ACT

- The mission of the Marine Corps is found in Title 10, U.S.C. (National Security Act of 1947 w/Amendments), Section 5013

"Section 5013, United States Marine Corps: composition; functions. (a) The Marine Corps, within the Department of the Navy, shall be organized as to include not less than three combat divisions and three air wings, such other land combat, aviation, and other services as may be organic therein. The Marine Corps shall be organized, trained, and equipped to provide fleet Marine forces of combined arms, together with supporting air components, for service with the fleet in seizure or defense of advanced naval bases and for the conduct of a naval campaign. In addition, the Marine Corps shall provide detachments and organizations for service on armed vessels of the Navy, shall provide security detachments for the protection of naval property at naval stations and bases, and shall perform such other duties as the President may direct. However, these additional duties may not detract from or interfere with the operations for which the Marine Corps is primarily organized. (b) The Marine Corps shall develop, in coordination with the Army and the Air Force, those phases of amphibious operations that pertain to the tactics, techniques, and equipment used by landing forces. (c) The Marine Corps is responsible, in accordance with integrated joint mobilization plans, for the expansion of peacetime components of the Marine Corps to meet the needs of war".

- A 1978 amendment to the National Security Act provides that the Commandant of the Marine Corps sits as a full member of the Joint Chiefs of Staff.



## COMPOSITION OF THE MARINE CORPS

The four major components of the regular establishment of the Marine Corps are:

- Headquarters of the Marine Corps
- Operating Forces
- Supporting Establishment
- Marine Corps Reserve

The Operating Forces of the Marine Corps consist of:

- The Fleet Marine Forces (FMF)
- Marine Detachments Afloat
- Security Forces

The two Fleet Marine Forces, FMF, Atlantic and FMF, Pacific are assigned to the U. S. fleets as an integral part of the Operating Forces of the Navy.

The Supporting Establishment includes those Marine Corps schools, recruit depots, supply installations, bases, barracks, air stations, and other activities that train, maintain, and support Operating Forces.

The Marine Corps Reserve provides a trained force of qualified personnel for active duty in the U. S. Marine Corps in time of war or national emergency.

## MARINE CORPS TACTICAL FORCE ORGANIZATION

Fleet Marine Forces are comprised of ground, air, combat support, and combat service support (CSS) units that are routinely task organized into Marine Air-Ground Task Forces (MAGTFs) for both training exercises and deployments. Marine Corps policy is that Fleet Marine Forces will be employed as integrated air-ground task forces tailored to accomplish specific missions. Regardless of the size of the MAGTF, it will include four major components:

- Command Element
- Ground Combat Element
- Aviation Combat Element
- Combat Service Support Element (including Navy support elements)

There are three basic types of MAGTFs. The Marine amphibious unit (MAU) is a task organization which is normally built around a reinforced infantry battalion and a composite squadron. It is normally commanded by a colonel and employed to fulfill routine forward afloat deployment requirements. The MAU provides an immediate reaction capability to crisis situations and is capable of relatively limited combat operations. Because of its comparatively limited sustainability, it is not envisioned that a MAU will routinely conduct amphibious assaults. When committed ashore, a MAU is normally supported from its seabase. A MAU is considered to be the forward afloat deployed element of a larger landing force, which would be constituted as required from CONUS or forward based combat ready Fleet Marine Forces. A notional task organization for a MAU is displayed in Figure 1.

### MARINE AMPHIBIOUS UNIT (MAU)\*

|                          |        |                                     |             |    |             |
|--------------------------|--------|-------------------------------------|-------------|----|-------------|
|                          |        | <u>PERSONNEL</u>                    |             |    |             |
|                          |        | USMC 2400                           |             |    |             |
|                          |        | USN 300                             |             |    |             |
| <u>COMPOSITE</u>         |        | <u>BATTALION</u>                    |             |    |             |
| <u>SQUADRON</u>          |        | <u>LANDING TEAM</u>                 |             |    |             |
|                          |        |                                     |             |    |             |
| <u>MAU SERVICE</u>       |        |                                     |             |    |             |
| <u>SUPPORT GROUP</u>     |        |                                     |             |    |             |
| <u>AIRCRAFT/MISSILES</u> |        | <u>MAJOR GROUND WEAPONS SYSTEMS</u> |             |    |             |
| 6                        | AV-8*  | 5                                   | TANKS       | 6  | 155MM HOW   |
| 12                       | CH-46  | 8                                   | 81MM MORTAR | 9  | 60MM MORTAR |
| 4                        | CH-53  | 24                                  | DRAGON      | 5  | 50 CAL MG   |
| 4                        | AH-1   | 8                                   | TOW         | 60 | M60 MG      |
| 2                        | UH-1   | 12                                  | LVT         |    |             |
| 20                       | REDEYE |                                     |             |    |             |

\* ACTUAL TASK ORGANIZATION FORMED TO ACCOMPLISH SPECIFIC MISSIONS MAY VARY FROM THE ORGANIZATION SHOWN

FIGURE 1

The Marine amphibious brigade (MAB) is a task organization which is normally built around a reinforced infantry regiment and a composite Marine aircraft group. It is normally commanded by a brigadier general and is capable of conducting amphibious assault operations of limited scope. During potential crisis situations, a MAB may be forward deployed afloat for an extended period to provide immediate response and may serve as the precursor of a larger force. Under these conditions, MAB combat operations may be supported from the seabase, facilities ashore, or a combination of the two. A notional task organization for a MAB is displayed in Figure 2.

# MARINE AMPHIBIOUS BRIGADE (MAB)\*

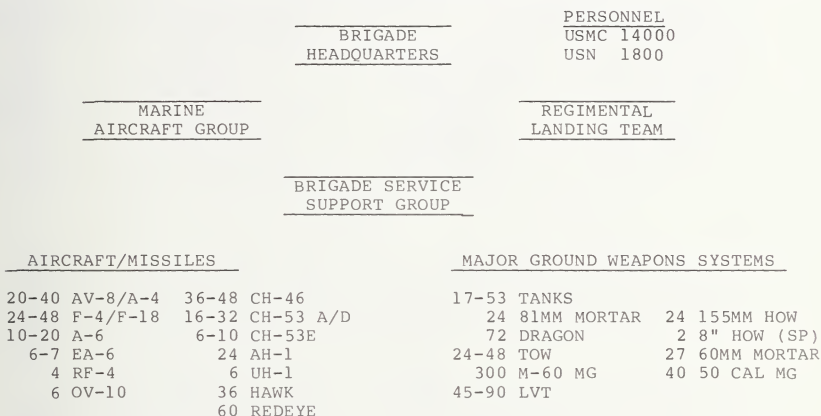


FIGURE 2

\* ACTUAL TASK ORGANIZATION FORMED TO ACCOMPLISH SPECIFIC MISSIONS MAY VARY FROM THE ORGANIZATION SHOWN

The Marine amphibious force (MAF) is the largest of the MAGTFs, and is normally built around a division/wing team. However, it may range in size from less than a complete division/wing team up to several divisions and aircraft wings, together with an appropriate combat service support organization. The MAF is commanded by either a major general or a lieutenant general, depending on its size and mission. It is capable of conducting a wide range of amphibious assault operations and sustained operations ashore, and can be tailored for a wide variety of combat missions in any geographic environment. I MAF is located on the West Coast, II MAF on the East Coast and III MAF in the Central and Western Pacific. A notional task organization for a MAF is displayed in Figure 3.

MARINE AMPHIBIOUS FORCE (MAF)

FORCE  
HEADQUARTERS

|           |       |
|-----------|-------|
| PERSONNEL |       |
| USMC      | 45600 |
| USN       | 6300  |

MARINE  
AIRCRAFT WING

REINFORCED  
DIVISION

FORCE SERVICE  
SUPPORT GROUP

AIRCRAFT/MISSILES

|                 |              |
|-----------------|--------------|
| 60-100 AV-8/A-4 | 96-156 CH-46 |
| 60-84 F-4 F-18  | 64-80 CH-53  |
| 20-40 A-6       | 24-48 AH-1   |
| 9-15 EA-6       | 24 UH-1      |
| 7-9 RF-4        | 72 HAWK      |
| 12-18 OV-10     | 300 REDEYE   |
| 18-24 KC-130    | 15-30 CH-53E |

MAJOR GROUND WEAPONS SYSTEMS

|                |                |
|----------------|----------------|
| 70-123 TANKS   |                |
| 72 81MM MORTAR | 72 155MM HOW   |
| 216 DRAGON     | 12 155MM HOW(S |
| 72-144 TOW     | 18 8" HOW(SP)  |
| 601 M-60MG     | 81 60MM MORTAR |
| 124 50 CAL MG  |                |
| 208 LVT        |                |

FIGURE 3

The MAGTF is a tailored combined arms organization. Separate employment of MAGTF elements under another command structure is contrary to Marine Corps policy. To do so is to fragment combat power, cause tactical and logistical supportability to become questionable, and reduce overall combat effectiveness.

MAGTFs organized for amphibious operations deploy as the landing force aboard amphibious task force shipping. MAGTFs are also deployed for rapid response or reinforcing roles by means of tactical or strategic air or sealift. MAGTFs may be formed and deployed for combat, contingency deployments, and training exercises, and may be committed to combat from contingency deployments.

## CONTINGENCY RESPONSE

A MAGTF forward deployed as a contingency force is usually embarked in amphibious shipping. Its organization is based upon a general mission with consideration given to potential mission requirements and available forces. Because of their inherent flexibility, MAGTFs are capable of rapid response to myriad crisis situations. The missions that may be performed by the forward deployed MAGTFs include:

- Assist U. S. diplomatic efforts through peaceful projection of influence and, during periods of crisis, provide a selective show of force and interest.
- Permit early commitment of U. S. force to combat when required.
- Preserve options limiting the degree, direction, and character of U. S. involvement.
- Assist allies through provision of flexible and selective levels of military assistance.
- Provide humanitarian assistance/disaster relief.
- Protect/evacuate non-combatants and installations.

Fleet Marine Force, Atlantic (FMFLANT), Norfolk, Virginia, provides forces to constitute the 22d MAU or 24th MAU for deployments to the Mediterranean and Indian Ocean. Three to five amphibious ships, depending upon type, are required for the 2000 Marines and sailors comprising the MAU.

Fleet Marine Force, Pacific (FMFPAC), Camp Smith, Hawaii, provides forces that make up the 31st MAU for deployments to the Western Pacific and Indian Ocean. Four amphibious ships are required for the 1800 Marines and sailors comprising this MAU. Additionally, FMFPAC provides forces for BLT BRAVO deployments in the Western Pacific aboard three amphibious ships with an approximate strength of 1200 Marines and sailors deployed from forces stationed on Okinawa.

Embarked landing force Marines are frequently ashore for training. Normal reaction time encompasses reembarkation and getting underway within 48 hours. However, reaction time in a contingency area can be reduced to less than one hour through utilization of warning indicators and positioning the amphibious task force and landing force offshore.

Each of the Marine Corps' three divisions maintains an air contingency battalion landing team of about 1200 Marines and Navy Corpsman on alert for deployment by Military Airlift Command (MAC) aircraft to respond to fast-breaking worldwide contingency

situations. These teams are equipped with crew-served weapons, e.g., 81mm mortars, the anti-tank missile systems DRAGON and TOW, and 105mm howitzers.

Specific quantities include:

8 81mm mortars,

24 DRAGONS

8 TOW

6 105mm howitzers or 6 155mm howitzers

Reaction times vary as established by operational commanders. Response times may be 16 hours or less from departure airfields by implementing planned air alert procedures. Airlift requirements vary in response to prescribed equipment and supply loads established by the operational commanders.

Navy-Marine Corps operational forces normally are assigned to the fleet commanders. Forward deployed forces are under the operational control of the fleet commander through the appropriate unified commander. Changes in operational control occur as forces pass through the geographical areas assigned to various unified commands.

Naval forces (Navy and Marine) conduct amphibious operations either in support of a joint (combined) task force or subordinate unified command already established in the contingency theater. Marine forces deployed by strategic airlift or sealift deploy under the operational control of their normal fleet commander. On arrival in theater (or at another point mutually agreed upon by the unified commanders concerned), Marine forces come under the operational control of the appropriate joint (combined) task force or unified commander.

A MAGTF engaged in sustained operations ashore, as a part of a joint task force or unified command, is employed as a separate service component of the joint/combined command, or as a single service force under the land force commander (of the joint task force or unified commander). Regardless of the command exercising operational control, the Marine air-ground team maintains its unit integrity.

## EMERGING MAGTF DEPLOYMENT CONCEPTS

Amphibious shipping remains the premier strategic mobility asset by virtue of its capability:

- ° To deploy a complete MAGTF.
- ° To act as the projection mechanism for introduction of that MAGTF.
- ° To serve as a source of subsequent sustainability until a sea line of communication is established.

The Department of the Navy is committed to the attainment of a MAF and MAB level of amphibious shipping within the 600 ship Navy by the end of the 1990 Funded Delivery Period. To achieve increased MAGTF responsiveness it will be necessary to utilize strategic mobility assets beyond the level provided by current amphibious assault shipping.

The most innovative and promising strategic mobility initiative is the Maritime Pre-positioning Ships Program called MPS. This concept provides for the rapid commitment of highly capable and sizeable Marine forces to crisis areas, and combines the best features of our total force airlift and sealift capabilities.

The MPS program is designed to complement, not replace, our forcible entry capability, which remains the backbone of power projection. In time of crisis, Marines can be airlifted to a contingency area for link-up with pre-positioned supplies and equipment and subsequently form for combat.

The MPS program will provide forward deployed, specially designed ships with embarked equipment and supplies to support three brigade-sized MAGTFs. In the near term, the Marine Corps has placed equipment and supplies for one brigade-sized MAGTF aboard Military Sealift Command chartered vessels. This near-term capability will remain on-station until replaced by the third of the more mature MPS task groups.

MPS task groups will be comprised of specially designed and outfitted vessels. They will expand our current capability by providing a self-load and off-load system for pierside and in-stream cargo discharge.

In sum, the MPS concept is naval in character and will provide an independently employable force of combined arms which will be capable of stand-alone operations. This concept provides a wide range of flexible alternatives which will make them suitable for:

- ° preemptive presence;
- ° reinforcement of previously committed amphibious forces, other U. S. forces, or allies;
- ° surge support of U. S. forces;

- deterrence and peacekeeping; and,
- humanitarian assistance.

Although strategic airlift capabilities will undergo some expansion by 1990, their utility will continue to be confined to crises characterized by a secure, well-developed, international airhead, a force introduction pace which accepts small incremental buildup of forces at a single site, and complex refueling and overflight requirements highly sensitive to shifting international political currents.

Due to constraints on both amphibious shipping and strategic air assets, an expanded amphibious concept for 1990 will routinely incorporate Military Sealift Command shipping and MPS flotillas to effect the required increases in strategic mobility.

Finally, a newly assertive and global U.S. foreign policy and its explicit demand for more rapid response to crises is translated by Marines into MAGTF response. The "A" in MAGTF requires not only timely deployment of aircraft, but also timely deployment of the logistics/ maintenance facilities to support and repair them.

Given these realities, one possibility to deploy MAGTFs of greater capability and more rapid expansion potential is a concept here entitled the "MAB Forward". Under this concept the current forward afloat forces (MAUs) would become the forward echelons of MABs (concurrently receiving enhanced combat power and C3I capabilities). The MAB organization would consist of the following components:

- Forward Echelon embarked in amphibious assault shipping (forces similar to today's MAUs but with a functional slice of the entire MAB task organization including staffs).
- Main Body (when deployed) embarked in either amphibious assault shipping, amphibious support shipping, or strategic airlift assets.
- Fly-in Echelon
- Rear Echelon

Amphibious support shipping refers to ships that offer the following features: self-sustaining; spread loading; deck stowed organic lighterage; in stream load/off-load and limited austere troop accommodations that permit them to participate in and to support across-the-beach, though not assault, operations.

Under the MAB Forward concept, requirements for amphibious assault shipping are unchanged. These specialized ships remain the cornerstone of our strategic deployment and forcible entry capability for the reasons cited earlier. However, fully exploiting the strategic mobility of the MPS flotillas is a measure which complements constrained assault shipping capabilities



and which yields additional, versatile strategic sealift with flexible offload though not assault, capabilities.

The MAB's Forward Echelon contains the full scope of command capability in an austere staff. It, however, lacks depth for sustained operations. Rotation of Forward Echelons would occur much as it does today. Routine forward deployment rotation would be supported by standing MAB organizations internally organized into a FORWARD ECHELON, a residual MAIN BODY and a FLY-IN ECHELON. Under this concept the MAB could build on its Forward Echelon by any of a number of methods.

- ° The Main Body could be embarked in amphibious assault shipping to form an afloat amphibious force.

- ° A portion of the Main Body could be airlifted to and then embarked aboard MPS to form a MAB for subsequent operations ashore. (No dedicated berthing and messing facilities will be required. Transportation time is expected to be short. Personal needs, such as sleeping and messing, will be provided by the embarked Marines.) The remainder of the MAB would be airlifted to the Amphibious Objective Area (AOA).

- ° It could be airlifted to form a MAB ashore in the AOA.

Approximate disposition of the MAB elements might be as indicated here.

| <u>MAGTF<br/>COMPONENT</u> | <u>Forward<br/>Echelon</u> | <u>Main<br/>Body</u> | <u>Fly In<br/>Echelon</u> | <u>Rear<br/>Echelon</u> |
|----------------------------|----------------------------|----------------------|---------------------------|-------------------------|
| Ground Combat              |                            |                      |                           |                         |
| Element (GCE)              | 1/3                        | 2/3                  |                           |                         |
| Aviation Combat            |                            |                      |                           |                         |
| Element (ACE)              | 1/6                        | 3/6                  | 2/6                       | (1/6)                   |
| CSS                        | 1/4                        | 1/2                  | 1/4                       | (1/4)                   |
| CMD                        | 1/4                        | 3/4                  |                           |                         |

Forces are assigned to the MAB full-time for planning purposes and as required for operations. All plans would be prepared on a MAB basis, e.g., landing plans designed to accommodate the full range of force build-up options (amphibious, airlift, MPS). Plans would likewise provide for the independent employment of the MAB's Forward Echelon (e.g., evacuations). Regular exercises would be conducted utilizing various force building options to train the staffs to include the RLT, BSSG, and MAG. Those elements not present would be simulated. Prior to deployment of the Forward Echelon to a operational area, the MAB would execute landing plan rehearsals, etc.

The "MAB Forward" concept provides for a smooth expansion of forward deployed forces into effective MABs. It addresses the specifics of achieving a more "rapid" MAB level response by spotlighting our capability to more rapidly assemble better prepared and more effective forces in distant operational theaters. These measures, in concert with combat power enhancements support the more capable and more effective MAGTF's required to meet the challenge of the 1990's.

## THE FLEET MARINE FORCES AS AN INSTRUMENT OF U.S. POLICY--

The circumstances surrounding the future employment of Fleet Marine Forces are likely to differ significantly from those which prevailed during the three decades following the Korean War. United States' strategic supremacy has given way to U.S./Soviet parity. The strength of Soviet military forces, naval forces in particular, has increased dramatically, while both the image and real capabilities of our general purpose forces have diminished.

Soviet prosecution of a multipronged, global offensive increases the possibility of direct confrontation between U.S. and Soviet conventional forces. The Soviet's larger, more sophisticated navy is a vital link in the support of destabilization programs, and the projection of Soviet influence in the Third World. Soviet naval forces also have an emerging capability for amphibious power projection far from the homeland.

Changes in the international economic scene have been equally dramatic. Growing dependence on Third World raw material sources has increased the vulnerability of the industrialized nations to "economic blackmail" by Third World cartels. Chronic political instability of the Third World further jeopardizes the steady flow of raw materials and has had a profound impact on the economies of the West. The perception that the U.S. is unable to deter or to react effectively to international terrorism has further exacerbated the situation.

In shaping our own military forces these realities must be kept clearly in mind. The U.S. is an island nation dependent on sea lanes for fuel, raw material and trade flows. The U.S.-Western European-Japanese interdependence of markets and products is critical to the economic and political positions of all concerned. In certain cases dependence on raw material imports will not only continue but intensify. This confluence of common interests and dependencies has transformed NATO into an oceanic alliance, global in scope. The U.S., as strongest among the industrial nations, has the major responsibility for preservation of these common interests; a task that requires a presence in the principal oceanic theaters and a credible power projection capability. Such theaters include; Central America, South America, Pacific Basin, Northeast Asia, Southeast Asia, Indian Ocean basin, Southwest Asia, Persian Gulf and Southern Africa.

Historically, the value of timely action with credible forces tailored to the need is clearly evident. History has also shown that base and overflight rights vanish as crises deepen. It is interesting to note that Naval forces have been involved in an overwhelming majority of those occasions in which U.S. military forces were employed as instruments of policy in the last 25 years. This high incidence of involvement results directly from

their ready, flexible and mobile character. The U.S. economy and international political position today are increasingly dependent on the existence of these naval forces.

The Fleets with their Fleet Marine Forces constitute this nation's primary military forces for response to distant crises. The Navy/Marine Corps team is a mobile force with the means to exercise sea control, to provide off-shore presence, to execute power projection and influence. Ready amphibious forces equipped with helicopters, air-cushion landing craft, and amphibian vehicles are not dependent on air facilities, ports and land bases (and their attendant logistical and political complications). Flexible amphibious forces are capable of landing anywhere with precisely the right size and mix of forces to avoid concentrations of hostile forces. Fleet Marine Forces embarked in amphibious shipping represent the ultimate in mobility, flexibility and readiness.

Marine Forces are strategically positioned and rapidly deployable with divisions, supporting aircraft wings, and logistic support groups based in North Carolina, California, and in Japan. These forces are trained, equipped, and logistically prepared to deploy by sealift, airlift, or any combination thereof. Their training, loading, and logistic packaging are aimed at preparing for a single objective - readiness for combat on arrival.

Future threats to U.S. interests may well demand the capability to either seize a port or to create one: only amphibious forces are inherently capable and equipped to do either. Amphibious forces provide for the precise application of force necessary to support political aims. These ready, flexible, and mobile policy instruments are prepared to respond on order of the National Command Authority.

Prepositioning of supplies and equipment complements strategic mobility. Marine Corps prepositioning programs encompass Maritime Prepositioning (including the Near Term Prepositioning Force now deployed to the Indian Ocean) and limited land prepositioning planned for Norway. Although prepositioning offers a dual capability, rapid response and rapid reinforcement, its utility is limited by the requirement to marry forces with prepositioned materiel in a secure environment. Fleet Marine Forces have been structured to provide both the strategic mobility and shoreline independence of amphibious forces and the rapid response of airlifted forces in conjunction with prepositioned equipment.

This crisis response ability to combine forward deployed forces, rapidly prepositioned/airlift configured forces, and MAGTFs in amphibious shipping is a capability uniquely Marine in the U.S. defense establishment. In such a situation, forward afloat MAGTFs can move from current positions, join enroute as required, and be ready upon arrival to seize a port/airfield complex. Sequentially, Maritime Prepositioning Ship (MPS) brigades headquartered in the U.S., can move by airlift into the seized airhead/port complex for linkup with maritime prepositioned equipment. Simultaneously,

additional Marine forces drawn from any of the three MAFs, sail in amphibious ships to round out a 50,000 man amphibious assault capable MAF in the objective area.

The sophistication and mechanization of potential adversaries requires increased firepower, tactical mobility and improved command, control and communications systems. The readiness of the Fleet Marine Force must be equal to the battlefield capabilities of potential foes and capable of sustaining operations until a favorable outcome is achieved.

Modernization is critical. The AV-8B VSTOL attack aircraft will provide responsive forward based tactical air support independent of fixed vulnerable runways. The Light Armored Vehicle (LAV) offers improved direct fire support to infantry units and limited anti-armor capability. Increased numbers of heavy lift CH-53E helicopters will satisfy the need for more battlefield and ship-to-shore lift. The Landing Craft Air Cushion (LCAC) will enable rapid ship-to-shore operations from standoff positions and expose 70% of the world's littorals to amphibious operations. A new assault amphibian, the LVTX will succeed the current LVT-7 in troop carrying roles during amphibious operations and subsequent operations ashore. Finally, improved command, control, and communications systems for more responsive control of MAGTF air and ground assets must be procured.

Fleet Marine Forces must have the staying power to prosecute operations until a successful political outcome is achieved. Sustainability requires the full range of ammunition stocks for mid- to high-intensity combat. Equally critical is the attainment of adequate spare parts and principal end item (PEI) inventories to guarantee the availability of key weapons systems in sufficient numbers to support adequate peacetime training as well as combat.

The flexibility to task organize MAGTFs and rapidly assemble a combined arms force tailored to mission requirements rests upon adequate manning of a balanced force structure. Here the retention of quality Marines in critical skills remains a significant problem.

Readiness and flexibility must be accompanied by adequate strategic mobility if the U.S. is to respond to overseas crises quickly, and with punch. Any decline in amphibious shipping levels, or delays in funding adequate numbers of the LSD-41, LHD-1, or LPDX classes of amphibious ships jeopardizes vital strategic mobility. It has been more than a decade since a MAF (AE) lift has been available in each ocean. A reasonable interim MAF(AE) + MAB (AE) level cannot be reached until the 1990 Funded Delivery Period (FDP). A MAF size operation today would require the amphibious shipping available in both fleets.

The critical supporting forces (e.g., naval gunfire, mine countermeasures) are also deficient. Although the Fleet has shrunk in gross numbers since 1965 the number of missile equipped combatants has actually increased.

Positive steps are being taken to remedy this situation. The solution demands a maritime perception of U.S. interests and recognition of the key role of Naval forces in projecting U.S. influence. The Department of the Navy is committed to the construction of a Fleet with a balance of capabilities. Redress of past imbalances of naval forces capabilities is aggressively being pursued. Increasing both the numbers and construction schedule for the LSD-41 class is the vital first step along with the programmed development of the LHD and LPDX classes. The reactivation of the Iowa class BBs is a positive step in narrowing the deficiency in NGFS.

Delivery of TAKX ships providing mobile prepositioning for the MPS Brigades offers a significant opportunity to increase both strategic sealift capability overall, and rapid reinforcement/non-hostile crisis response in particular.

Programs specifically designed to increase modern high speed on-load/offload tonnage in both the MSC and U.S. flag merchant fleet are vital to preserving our ability to provide transoceanic logistical support for overseas operations.

Taking full advantage of the array of capabilities resident in the Navy-Marine Corps team requires routine deployment of forces to international waters during the developing stages of a crisis. An adequate level of strategically mobile amphibious shipping to preserve that option must be provided.

The Fleet and Fleet Marine Force provide a uniquely capable instrument for response to the sea control, power projection, and presence missions demanded by U.S. and Allied interests. They can and should be more capable of meeting potential challenges to those interests.

The modern international setting is haunted by the spectre of wars of unprecedented destruction. International relationships are often characterized by tensions which go beyond the ability of one country to control:

- Competition for limited resources
- Political instability of emerging Third World countries
- Vulnerability of resource centers
- Virulent revolutionary movements
- Proliferation of sophisticated weaponry
- Continued Soviet military expansion and sponsorship of antidemocratic insurgent movements

This scene adds poignancy to the oft repeated dictum:

"THE BEST WAR IS THE ONE WE DIDN'T HAVE TO FIGHT."

The best way not to have to fight a war is to deter it. Since deterrence is an integral part of our national strategy, it would be well to reflect of the role on the Marine Corps in support of that strategy.

How does the U.S. Marine Corps fit within the national strategy of deterrence? Fundamentally, the Marine Corps' force structure is based upon a careful, objective assessment of both the existing and projected threat; it is complementary to the Nation's foreign policy objectives, and supports the national military strategy devised to deter or, if required, defeat the threat. Considering the international tensions previously mentioned, it is obvious that the U. S. strategy of deterrence tacitly recognizes that an ounce of prevention equals at least a pound of cure. A viable maritime strategy is essential to the deterrent strategy of our island nation. It is within this vital maritime strategy that the U. S. Marine Corps "Total Force In Readiness" makes its contribution to the amount of force this country can bring to bear. Among other things, an "ounce of prevention" requires a potent combination of land, sea, and air forces capable of timely response to developing contingencies anywhere in the world. Simple economics tells us that we cannot have land forces stationed in every geographical location where there may be a potential crisis. That means that when required, we must be ready and able to move appropriate combat power to crisis areas. In this regard, amphibious projection forces of the Navy/ Marine Corps team possess the unique capabilities to meet this global strategic requirement. The seas and their littorals present amphibious forces with a freedom of movement and capacity for sustainability, timeliness, and endurance that is not dependent upon basing or overflight rights. Furthermore, amphibious forces are self-sustaining and are capable of lifting our heaviest units and most demanding equipment. This, to a large degree, dictates why our overall national military strategy has a maritime flavor.



An amphibious task force with Marines embarked can be deployed over the seas, independent of fragile political agreements or forward basing, to a precise location and can:

- ° provide deterrence, through presence
- ° signal our Nation's resolve
- ° respond appropriately, should deterrence fail

The Marine Corps, with the doctrinal and structural flexibility to task organize its force to the mission at hand, with its unique forcible entry capability, and with the means to sustain itself from the sea, provides this Nation with a capability and potential that increases in value in the future.

The Marine Corps' ability to organize for combat rests on the unique structure of our operating forces, the foundation of which is the Fleet Marine Force (FMF). The Fleet Marine Force, organized geographically as Fleet Marine Force, Atlantic (FMFLANT) and Fleet Marine Force, Pacific (FMFPAC) are "type" commands under the operational command of the various Commanders-in-Chief for the two oceanic areas. FMFLANT and FMFPAC are comprised of the Divisions, Aircraft Wings, and Force Service Support Groups which reflect the Marine Corps' legislated structure. The FMFs provide their respective Commanders-in-Chief with specifically "tailored," or task organized, Marine Air Ground Task Forces (MAGTF), as required by the CINC.

The MAGTFs, the cutting edge of the Corps' operating forces, represent potent and balanced combined-arms, air/ground teams which are sized and organized to be totally mission capable while adhering to the principles of mass, offensive maneuver, security, simplicity, and especially, unity of command and economy of force. In keeping with the Marine Corps' fundamental mission of amphibious warfare, MAGTFs provide the landing forces for the various numbered fleets. Common to each MAGTF, and reflective of its balance and effectiveness, are the four major elements:

- ° Command;
- ° Ground Combat;
- ° Aviation Combat; and,
- ° Combat Service Support:

Nothing perplexes those who would create mischief more than the anxious knowledge that, somewhere beyond the ocean's horizon, there is a Navy/Marine Amphibious Task Force poised and ready to deal with that mischief. General MacARTHURS's statement still rings true: "The amphibious landing is the most powerful tool we have!" The noted strategist and historian, Captain B.H. LIDDELL HART agreed. This has been the steadfast utility of the Marine Corps, the readiness to respond with the capability to do whatever needs to be done with a total, integrated force that is sized to the mission.

This nation will continue to rely on the responsiveness of its Navy/Marine Corps amphibious projection force. It has been said that in any crisis situation the first questions asked by

the National Command Authority are:

- Where are the carriers?
- Where are the Marines?

The history of the past 38 years supports that assertion. In the approximately 250 crises to which the United States responded by deploying forces, naval forces have been used in over 200 of these events - and amphibious forces in 80% of those instances. It is fair to assume that the Nation will continue to look to the U.S. Marine Corps as its tested expeditionary force in readiness. It is the traditional role and the charter of the Corps as a vital part of this nation's Total Force.

Further, we are expeditionary in fact. Maintaining a rapidly deployable, self-contained, expeditionary capability has been and is the bread and butter of a Marine Corps deployed to fight as Marine Air/Ground (combined arms) task forces. MAGTFs are sized to satisfy mission requirements. The Marine Amphibious Unit (MAU), the smallest MAGTF, is organized around a Battalion Landing Team, a composite squadron, and appropriate combat service support units. The primary mission of a MAU is to provide presence and a rapid response capability. It is relatively limited in its range of combat capabilities. A MAU is designed to serve as a forward deployed afloat element of a larger MAGTF which may be expanded as required from CONUS based or other forward deployed MAGTFs. To gain a perspective on relative size, the U.S. peace-keeping force sent to Lebanon is a MAU.

The Marine Amphibious Brigade (MAB) represents the next largest task force and is normally constituted around a Regimental Landing Team and a provisional Marine Aircraft Group. The MAB is a considerably more capable MAGTF and is organized to conduct operations across the entire spectrum of combined arms and amphibious warfare. MABs represent potent, rapidly deployable Marine forces.

The largest MAGTF, the Marine Amphibious Force (MAF), is the most capable combat organization. Structured around one or more division/wing team(s), the MAF is capable of conducting the full range of amphibious operations as well as sustained operations ashore.

The Marine Corps force structure is built on a Total Force concept, utilizing active and reserve components, to provide the essential unit structure required to fulfill peacetime missions and concurrently to provide an adequate base for transitioning to wartime requirements. This concept reflects time-phased deployment and mobilization planning factors, and provides a fiscally responsible and operationally responsive balance.

The Marine Corps' current structure is directed toward providing this nation with three active MAFs and a Reserve Division/Wing Team (DWT). Such a structure conforms to the legislated basis established by Congress and contained in Title 10, USC; however, the internal structure of the Divisions, Wings and Force Service Support Groups comprising our Fleet Marine Force



is correctly left to the discretion of the Commandant. As such, this affords the flexibility necessary to meet the challenges posed by a changing threat; to be compliant with to DOD guidance/policy; to be responsive to the requirements perceived by the Joint Chiefs and the CINC's; and, to adjust to resource constraints.

The Marine Corps' peacetime force structure, as reflected in the current program, is a balanced, fiscally constrained structure that responds to the Defense Guidance regarding mobilization capability and day-to-day contingency posture which includes forward afloat deployments. It achieves a force balance among combat, combat support, and combat service support functional capabilities. One way of expressing the Marine Corps contribution to the total force is to compare relative relationship to the total force program. For only five percent of the Fiscal Year 1984 DOD budget, this Nation's total force receives the following from the Marine Corps:

- 9% of the active military forces
- 11% of the general purpose forces
- 16% of the ground combat divisions
- 11% of all tactical fighter/attack aircraft.

Truly, this reflects a sound investment in the total force required to assure the success of a vital and potent strategy of deterrence.

In a nutshell: the Marine Corps is postured for global reaction, integrated with the fleet, prepared to rapidly expand forward afloat or committed forces, and capable of integrating all forward forces in theater under a common command, control, and communication system.

Maintaining a world-wide perspective, trained for rapid deployment by a variety of modes and for immediate employment upon arrival, and habitually task organized to conduct amphibious operations, Marines are fully capable of sustaining the fight once ashore. The Corps is structured primarily for employment as a task organized, sea-launched force with its own organic sustainability. Most importantly, MAGTFs are forward deployed both to the East and the West in response to JCS and CINC requirements. Using the unrestricted mobility of the high seas, we have the inherent flexibility of repositioning MAGTFs between theaters.

A MAGTF can be wholly integrated into the largest of joint and combined operations such as Team Spirit, Northern Wedding, and Bold Guard. Whether the opportunity is in the Western Pacific, or with our NATO allies, or in the United States, forward deployed and continental U. S. based Marine forces aggressively seek and are sought for joint training and evaluation exercises such as Cope Thunder, Cope Strike, Cope North, Red Flag, and others too numerous to cite.

The FMF is equipped with a complete air/ground command and control system armed with potent but strategically transportable weaponry and in possession of a completely expeditionary combat service support structure. Wherever and whenever possible, complete MAGTF's are provided with both active and reserve forces to participate in exercises. For example, Reserves were intimately involved with their active duty counterparts during the planning and execution of the September 1982 Combined Exercise Northern Wedding/ Bold Guard. The 3rd Battalion, 25th Marines of Cleveland, Ohio was augmented by Batteries G and H, 3rd Battalion, 14th Marines, Civil Affairs Group detachments, and a Provisional Marine Air Group of A-4 Skyhawks, UH-1N Huey's, AH-1J Cobras, CH-53 Sea Stallions, and Chicago based KC-130 Hercules tankers. Reserve Air and Naval Gunfire Liaison Company Marines provided fire support liaison to joint allied commands. There are numerous other examples.

The inherent flexibility of naval forces was vividly demonstrated last fall. While the situation deteriorated in Lebanon last summer, the America Carrier Battle Group and the Mediterranean Amphibious Ready Group with its embarked MAGTF - the 32nd MAU - were positioned off the Levantine coast. The MAU was ordered ashore, covered by the Battle Group and completed the evacuation of the P.L.O. This same unit had been scheduled for the October combined exercise, Display Determination 82 in Vatika, Greece. In response to a deteriorating situation, the 32nd MAU redeployed to Beirut on 29 September. Meanwhile the 24th MAU was participating as an integral part of the larger 4th Marine Amphibious Brigade in combined exercise Northern Wedding/Bold Guard which was taking place along the Baltic coast of West Germany. In order to meet the Display Determination commitment the 24th MAU was detached from the 4th MAB and sailed to the Mediterranean. On the 29th of October, having completed Display Determination, the 24th MAU conducted an early relief of the 32nd MAU in Beirut. Meanwhile, the 31st MAU, embarked in Amphibious Ready Group Alfa Ships, was moved from the Western Pacific across the Indian Ocean to the Arabian Sea where it participated as the replacement for the 24th MAU in RDJTF exercises Valiant Usher and Jack Tiger. The 32nd MAU departed Beirut on the 1st of November. While outbound from the Mediterranean, it conducted an amphibious landing exercise on the Moroccan coast in place of the 24th MAU. This chronology demonstrates the inherent flexibility of naval and amphibious forces.

Marines today continue to hone their skills, both individually and as units, to maintain a constantly high state of readiness, and routinely to demonstrate that readiness. For example, this last year has seen Marines participating in more than 18 joint or combined exercises, almost half of which were conducted beyond our shores with the forces of foreign countries. Intensive training such as this prepares Marines to respond appropriately to crises of all kinds - as evidenced by the Marines now in Lebanon keeping the peace.

How does the Marine Corps play its vital role as the nation's expeditionary force in readiness? More specifically, how are Marines and their units prepared for the demanding requirements of this mission?

All of the foregoing is contingent on one quality, and that is readiness. The number one priority of the Corps is readiness which encompasses many things -- people, equipment, training, and leadership to name a few. It is the proper molding and blending of these elements that produces true readiness. We all know who does the molding, and where the leadership comes from to place all the parts together in the phenomenally complex equation called readiness: it's the people. The Commandant's number one priority is to man the structure of our part in this country's total force with quality Marines. They are essential. The Marine Corps is first and last people. Perceptions vary from John Wayne in the "Sands of Iwo Jima" to a young Marine peacekeeper sharing candy with a youngster in war torn Beirut. Whether its in the role of assault infantry against a defended beachhead, keeping the peace, or providing humanitarian assistance, our most precious asset in the Marine Corps is the individual Marine. For as long as history records, he has been and remains the most important, dependable, and flexible weapon system in our arsenal. That is why when it comes to investment in hardware the Marine Corps does not think in terms of "manning the equipment," but rather "equipping the man!"

The budget reflects a balanced program of those essential elements necessary to ensure that the Marine Corps remains a viable force-in-readiness for this Country. The ingredients of the program reflect essential replacement of aging combat equipment, a modest increase in manpower, and improvement in the capability to sustain our Marines, once in combat. There are no frills, no exotic equipment, just initiatives to enhance our capability to fight and win. Enhancements to equipment will appear across the board: improved individual and crew served weapons; a greater anti-armor capability; and significantly increased artillery firepower. To increase ground mobility, aging tactical vehicles are being replaced with a new multifunctional vehicle. The life of amphibious assault vehicles is being extended and a light armored vehicle is being acquired. Ability to command and control Marine forces will also be significantly improved.

The aviation modernization effort is vital to providing flexible, responsive, and effective support for Marines on the ground. Steady progress is being made in the modernization of light attack and fighter/attack programs. Aviation initiatives directly related to gaining and maintaining relative combat superiority, as well as air superiority, rest with the AV-8B and F/A-18 programs. At present, four full-scale development AV-8B aircraft are currently in flight testing and are producing impressive results. The ultimate goal is an all V/STOL light attack force in an effort to provide the MAGTFs with a modern, flexible, responsive, and accurate close air support capability.

The first three F/A-18 Marine Fighter Attack squadrons are currently standing-up at MCAS El Toro, California. The Marine Corps strongly supports the F/A-18 as a replacement for the aging F-4s in the fighter/attack squadrons. The capabilities of this superior multirole aircraft meet the fighter requirements of the modern battlefield as well as provide significant reinforcement for close and direct support of the Ground Combat Element.

The heavy lift helicopter capability is being significantly modernized and improved with the CH-53E helicopter. Presently, two squadrons of CH-53Es are operational. Each aircraft can lift 32,000 pounds, an amount greater than any other helicopter in the free world. This helicopter significantly enhances other on-going mobility and firepower capabilities being added to the MAGTFs.

There is concern over the declining medium lift assault capability and Marines look forward to the advanced tilt rotor JVX, a joint development program with potentially far reaching consequences. JVX meets the need for a 250 knot assault transport that is self-deployable worldwide. Capable of lifting 24 Marines up to 200 nautical miles, JVX will provide increased stand-off for naval and landing forces, the ability to rapidly penetrate deep into enemy rear areas or to bypass adverse terrain, weather or threats. Thus, JVX offers a quantum increase in tactical medium-lift mobility.

The Tactical Air Operations Center (TAOC)-85 is a modular, state-of-the-art air control system that will provide significant improvements in air space control for the MAGTFs. This interoperable air command and control system will also serve as the host for the Joint Tactical Information Distribution System (JTIDS). JTIDS, when fully implemented, will provide real-time exchange of tactical information within the MAGTF and with joint and combined NATO forces.

It does no good to be "ready" at Camp Lejeune, North Carolina or with forward-deployed forces afloat, and not be capable of projecting and sustaining ready forces across the sea when and where they are needed.

In this respect, the efforts of the Secretary of the Navy, the Chief of Naval Operations, and the Commandant of the Marine Corps, to regain clear maritime superiority, which includes programs essential to the Marine Corps' principal reason for being -- amphibious operations are strongly supported. The Navy's amphibious ship-building program promises revitalization of the amphibious lift capability of the Navy/Marine Team. The first two ships of the LSD-41 Class are on the building ways. The Navy currently plans to build at least 10 LSD-41s, and 10 variants of the LSD=41. The LHD-1 Class Amphibious Helicopter platform will allow transport, launch, and recovery of both fixed and rotary wing aircraft and is in the contract design stage. The Navy is requesting funds in the Fiscal Year (FY) 1984 budget to build the first LHD. Both the LSD-41 and LHD-1 Class ships will have the capability to carry the landing craft, air cushion "hovercraft", called LCAC.

The Navy's LCAC program represents a revolutionary breakthrough in ship-to-shore movement. Current projections envision a force of about 100 of these advanced surface craft. The first six LCACs are under contract and the first LCAC base, at Camp Pendleton, California, is under design in preparation for the craft's delivery in 1986. The LCAC provides a quantum advance in amphibious capability by increasing speed and flexibility and reducing vulnerability. Its speed of over 40 knots and its 60 ton payload will provide a unique tactical opportunity for surprise landings from over the horizon onto widely separated beaches. LCAC will make the enemy's ability to defend far more difficult. The complementary capabilities of JTV combined with LCAC offer previously unheard of speed and flexibility in a modern amphibious assault. The results present incalculable problems to potential enemies, thus adding significantly to our strategy of deterrence.

Our assault amphibian vehicles, LVTP-7A1s, the workhorses of the amphibious surface assault, serve to further reduce our vulnerability during the critical ship to shore movement and improve our mobility on the battlefield. The assault amphibious vehicle Service Life Extension Program (SLEP) will extend the utility of the LVT-7 into the 1990s.

The MPS initiatives are currently tailored to support the deterrence mission within the Southwest Asia region; however, at the same time they retain the flexibility for employment on a global basis.

The reactivation of the USS New Jersey is a promising step toward an improvement in the area of naval gun fire support. Significant enhancements are also being actively pursued in the critical area of medical support. Funding of the T-AH Hospital Ship Program and the Combat Zone fleet hospitals represents a dramatic increase in the bed capacity and surgical facilities that will be available to support amphibious operations.

The Marine Corps' ability to meet the challenges of the future will depend ultimately on quality people - who can endure rigorous training, accept firm discipline, respond to sound leadership, and perform intelligently and effectively. The Marine Corps will recruit only those individuals capable of upholding its standards.

The quality of the Marine Corps and of the Corps' contribution to the total force capability of this Nation, will be assured through uncompromising adherence to high standards - of performance, conduct, physical fitness, and appearance. Marines passionately seek to serve their Country - and they serve it well.

It is that spirit which sets Marines apart. It is a spirit which disavows defeat, fatigue, and repeated hardship. It knows no distinction between active and reserve component, joint or combined staff. Together, their spirits combine into a whole which is always greater than the sum of the individuals. Each Marine indeed becomes a key element in this concept.

COMMAND, CONTROL, COMMUNICATIONS, COMPUTER AND INTELLIGENCE  
C<sup>4</sup>I IN THE MID-RANGE: NOTES ON A CONCEPT OF EMPLOYMENT

The objective of C<sup>4</sup>I is to provide effective command, control, communications, and intelligence for the MAGTF on the complex battlefield. Where tactically feasible and logistically supportable it is envisioned that the Marine Tactical Automated Command Control System (MTACCS), Landing Force Integrated Communication System (LFICS), and other automated systems will be employed on an integrated basis so that essential combat information can be automatically received, processed, displayed, and distributed.

Systems must be designed with the reliability, redundancy, maintainability, and reconfiguration capability to permit control functions to degrade piecemeal - not catastrophically in the face of equipment loss resulting from malfunctions or enemy action. Also tactical C<sup>4</sup>I systems will be designed for maximum mobility, flexibility, commonality, and interoperability with the C<sup>4</sup>I systems/subsystems of other services and the Defense Communications System (DCS). C<sup>4</sup>I systems must be capable of operating in a high EW threat environment and in a nuclear environment.

The communications system to transfer information in digital and analog form between C<sup>4</sup>I systems modes must provide, within cost effective parameters, a rapid, reliable, and secure, multi-channel switched system optimizing use of automation. It must include: error detection/correction, high capacity throughput of digital and analog data and record communications, and secure transmission of voice data traffic. This equipment will be rugged but lightweight, easily maintained, modular where possible, and helicopter transportable.

The new systems now being developed to be fielded in the late 80's promise to fulfill some of the requirements stated above. The impact of many of these revolutionary C<sup>4</sup>I and supporting systems on tactics and doctrine, however, is not entirely clear. The fielding of C<sup>4</sup>I systems must be evolutionary because many questions are yet to be answered:

- How much automation is enough?
- Will the benefit of fielding a system justify the cost?
- Does taking the human element out of the loop, in fact, hinder rather than help the decision-making process?



These questions cannot and will not be answered until the most elementary of these systems has been fielded. Only then, will the commander be able to make a decision on what is needed next. This means that there will be a period of growth, driven by field trials, during which all requirements may not met.

The most critical problem plaguing the development of new systems is the integration of systems within the Marine Corps and in joint and combined operations. The problem has been brought about by a large number of parallel developments, and the rapidly advancing state of technology in the C<sup>4</sup>I arena. The problem of intra and inter-operability is addressed, first, by identification of the required interfaces, and then, by ensuring that the proper design work is carried out.

Due to increases in the total number, density, and types of C<sup>4</sup>I assets required on today's battlefield, the number of MAGTFs that can be deployed simultaneously is limited by the command and control assets available. Fielding various components of MTACCS (TAOC-85, PLRS, MAGIS, MIFASS etc) by 1990 will improve the situation. The Marine Corps is actively engaged in a comprehensive study and assessment of the organization and manning of its communications battalions. A recent study has been completed which identifies a structure and the manning to maximize the capabilities of command and control assets supporting the MAGTF. A test of this proposed organization will be conducted with the 8th Communications Battalion in FY 84.



## MISSION AND ORGANIZATION OF THE MARINE CORPS RESERVE

The mission of the Marine Corps Reserve is to maintain a Reserve component of trained units and qualified individuals for active duty in time of war or national emergency.

### ORGANIZATION

The active Reserve has four components; the Selected Marine Corps Reserve (SMCR), the Individual Mobilization Augmentees (IMAs), the Individual Ready Reserve (IRR), and the Standby Reserve. The 40,500 members of the Selected Marine Corps Reserve belong to, and train with units of the Marine Corps Reserve. The Reserve's 400 Individual Mobilization Augmentees are pre-assigned to mobilization billets that must be filled on or shortly after M-Day. The Individual Ready Reserve with its 46,700 reservists and the Standby Reserve with its 1,800 members complete the active Reserve picture. The Reserve including its 4,500 active duty support personnel totals 93,900 personnel.

### POSTURE

Overall the posture of the Reserve is solid and we continue to see steady progress. By the end of FY82, Selected Reserve strength stood at 40,461, five percent over plan. Unit strength increased by 1,600. First term and career retention was up five percent, and the percentage of high school graduates climbed to 87 percent. On the less positive side, over 21 percent of the ground units are degraded for grade and skill shortages. This reflects the decline in prior service over the past four years. To reduce skill shortages and achieve the goal of 100 percent war-time strength by 1986, a vigorous attrition management program has been instituted, bonus utilization will be maximized, recruit tracking and training opportunities will be expanded, and a comprehensive prior service recruiting program has been inaugurated.

A management structure has been established at the Marine Corps Reserve Support Center (MCRSC), Overland Park, Kansas to receive, administer, train, assign, mobilize, and eventually, discharge Individual Ready Reservists. When fully implemented, it will include the organic ADP capability to support the administration, pay, training, and mobilization of pre-trained individual reservists in a crisis.

The IRR has a viable population. More than 50 percent of its population has been released from active duty for less than one year. Over 75 percent of the officers in the IRR are captains and below and 80 percent of the enlisted are lance corporals to sergeants.

## EMPLOYMENT

In the continuing implementation of the Total Force Policy, the most probable employment roles for the active Reserve Component are as follows:

### - SMCR

- ° Provide trained units to selectively augment and reinforce the active forces in order to field three MAFs at full wartime structure.

- ° Provide a MAB or, if augmentation/reinforcement is not ordered, a 4th DWT.

- ° Provide a nucleus for reconstitution of a Fourth Division, Wing, and FSSG.

- Individual Ready Reserve and Standby Reserve. These individual reservists will be the prime source of individual fillers for active and Reserve units. They will be employed to provide qualified individuals to fill shortfalls in active operating forces and Reserve units and to expand the supporting base as necessary to meet wartime contingency requirements.

## READINESS

Readiness remains stable. During FY82 mobilization operational deployment tests were held for 104 units of which 80 percent were found to be fully or substantially ready for deployment. MCCRES testing was increased from 13 units tested to 29 units, of which 90 percent were judged combat ready by active unit standards.

Nearly 1,600 Individual Ready Reservists, officers and enlisted, trained for mobilization assigned alongside their active counterparts. To ensure sufficient pre-trained individual manpower is available to meet time-phased wartime requirements, a major effort is underway which includes: an expansion in the number of individuals preassigned to critical mobilization billets; a 43 percent increase in mobilization training; and the continued refinement of a management structure capable of administering, training, mobilizing, and discharging individual reservists.

The SMCR structure is being examined and modified to ensure that it will optimally fulfill active force augmentation/ reinforcement requirements. It is anticipated that the wartime strength requirement (41K) will be achieved by the end of FY 86.

## LOGISTICS

A critical element in the ability of the Marine Corps Reserve to execute assigned wartime missions upon mobilization is the materiel readiness of the SMCR units. As an integral part of the Total Force, the SMCR requirements/deficiencies are a part of the total inventory objective of the Marine Corps.

The Marine Corps goals of procuring, issuing, and maintaining combat standard equipment for SMCR training allowances are being met. However, the additional wartime equipment requirements that are programmed to be held as stocks and used to completely fill SMCR unit Tables of Equipment (T/E), are not adequate to satisfy Total Force needs. Upon mobilization SMCR units would not experience a delay in reporting to their Station of Initial Assignment (SIA) based on equipment shortages alone. The deficiencies would, however, degrade the operational readiness and flexibility of the SMCR to perform probable mobilization missions. FY 83 procurement funds will reduce these shortages. With the continuing support provided by programmed funding levels, the SMCR, as well as the active forces, will substantially attain required sustainability levels by the end of FY 88.

Equipment improvements are being made to enhance the Marine Corps Reserve's ability to conduct training under varying environmental conditions. For example, the capability to field two infantry battalions simultaneously with cold weather clothing for training has been met. Additionally, a similar two-phased procurement to improve the posture of Nuclear, Biological, and Chemical Defense (NBCD) equipment has been developed. With \$3.6 million appropriated within FY 83 Operations and Maintenance, Marine Corps Reserve (O&MMCR) budget and an additional \$3.4 million requested in the FY 84 budget, significant progress will be made toward meeting SMCR NBCD training requirements.

The total dollars in each procurement appropriation specifically allocated to SMCR equipment buys for the Budget Year, FY 84, are as follows:

| <u>Budget Activity</u>                  | <u>PresBud</u>     |
|---|--------------------|
| 2 - Weapons and Tracked Combat Vehicles | \$ 16,163 K        |
| 3 - Guided Missiles and Equipment       | 0 K                |
| 4 - Communications and Electronics      | 2,556 K            |
| 5 - Support Vehicles                    | 17,423 K           |
| 6 - Engineer and Other Equipment        | <u>9,411 K</u>     |
| Total                                   | <u>\$ 45,553 K</u> |

Modernization of the Marine Corps Reserve aviation is of the utmost importance. This is underscored by the tasking of reserve squadrons to prepare for contingencies previously assigned to active units during the planned F-4 to F-18 transition. Though newer models are programmed for the Reserves as the active force upgrades its capability with new aircraft, some incompatibility between active and Reserve equipment will continue to exist.

The readiness of Reserve Aviation continues to be affected by the near obsolescence of its aircraft fleet, and by aircraft shortages, principally in KC-130 refuelers and AH-1 helicopters. With the exception of the UH-1N helicopters, all Reserve aircraft are Vietnam or pre-Vietnam vintage and face block obsolescence during 1987-95. To ensure Reserve aviation remains a viable force, the Marine Corps has developed a long range modernization plan to upgrade the capabilities of the 4th Marine Aircraft Wing. To this end, 14 A4Ms were introduced into the Reserves in October 1983. Additional KC-130's are being sought which will enable the Marine Corps to meet a long range goal of two Reserve squadrons.



## BASIC DEFINITIONS/CONCEPTS

In the past, the Marine Corps has used the term "military readiness" in the broadest sense. The Department of Defense has now defined MILITARY CAPABILITY as being the broadest term, and one which includes MILITARY READINESS.

MILITARY CAPABILITY is defined by the Department of Defense as the ability to achieve a specified wartime objective (e.g., win a war or battle, destroy a target set). It has four components:

- FORCE STRUCTURE: The numbers, size, and composition of the units that comprise our Defense forces, e.g., divisions, ships, aircraft wings, etc.
- MODERNIZATION: The technical sophistication of military forces, units, weapon systems, and equipments.
- SUSTAINABILITY: The "staying power" of military forces, units, weapons systems, and equipments. Sustainability is most often measured in numbers of days of supply, days of ammunition, etc.
- READINESS is essentially a measure of pre-D-Day status (extending at most into the initial combat operations), while SUSTAINABILITY is a post-D-Day measure extending for a specified number of days. We often speak of peacetime readiness, but seldom of combat sustainability.

It is important to note that a force or a unit can be 100 percent ready (e.g., all equipment totally operable and all personnel trained) but still not prevail against the enemy due to deficiencies in one or more of the other components of MILITARY CAPABILITY.



## SECTION II

### MANPOWER AND STRUCTURE CONSIDERATIONS

The paper in this section deals with the issues of active end strength including retention, alternate structure, and incentive programs.



## END STRENGTH

The determination of the military manpower requirements is a part of the continuous comprehensive requirements determination process which considers national strategy and defense guidance. Early in the process, the analysis is synthesized with traditional functions and missions to describe a capability requirement for the program years which represents a force structure demand for manpower designed for a minimum risk. This minimum risk force is unconstrained by fiscal and manpower limitations, and provides a point of departure from which to measure strength capabilities. Within the Joint Strategic Planning System (JSPS) process, the minimum risk force is refined to a planning force consistent with a reasonable level of risk. This planning force is judged capable of executing the Marine Corps responsibilities for the national military strategy, and represents a mid-range objective described in the current mid-range plan (MMROP) which presumes a peacetime draft or 180 days of mobilization.

The planning force, as a mid-range objective, is further pared down to force levels required immediately for war and against which readiness in peacetime is measured. Such force levels comprise the programmed structure and provide the specific requirements benchmark for program development, as well as for measuring immediate readiness for war. The force structure contained in the current FYDP represents POM-84 programming decisions on force manning, strength achievability, and resource allocation. The FY84 budget, currently under review by Congress, includes the resources for an end strength of 197, 300.

Considerable disparity exists in readiness and force capability among the planning force, programmed structure, and FYDP manpower primarily in the activation and manning of base support, logistics, and certain aviation units. The differences for FY83 are shown below:

|                               | <u>Officer</u> | <u>Enlisted</u> | <u>Total</u> |
|-------------------------------|----------------|-----------------|--------------|
| Jan 1983 FYDP Manpower (FY83) | 19,274         | 174,789         | 194,063      |
| To fill Programmed Structure  | +1,221         | +17,154         | +18,375      |
| Programmed Structure          | 20,495         | 191,943         | 212,438      |
| To fill MMROP Force           | +5,739         | +36,523         | +42,262      |
| Planning/MMROP Force          | 26,234         | 228,466         | 254,700      |

For POM 84-88, the manpower program supports an increasing end strength profile, improved readiness, and a high degree of fit between billet skill and grade requirements and actual personnel inventory projects. The requirements determination analysis identifies an increasing demand for personnel of higher mental



categories to manage and operate new systems, and to maintain more sophisticated equipment. Manpower requirements for such technical skill areas as aviation maintenance, electronics maintenance, data processing, engineering, and avionics have been increased in the FY84-88 program.

The program to support the new requirements attempts first to correct existing skill deficiencies, and then to achieve the new manning levels by sustaining an aggressive retention program and a relatively level non-prior service accession demand. Marine Corps resources have been judiciously applied to further the program objectives.

During the evaluation of manpower supply supportability, certain factors were examined and their impact evaluated. The assessment assumed military pay raises aimed at achieving civilian comparability and proposed educational benefits in order to recruit and to retain quality individuals. Other factors, such as youth unemployment, were also considered in the analysis.

With the implementation of important compensation and incentive programs, and assuming their potential positive impact in retention and recruiting, the FY84-88 end strength increases can be realized. The strength profiles are reflected below (strength 000's):

|                 | <u>FY82</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> | <u>FY88</u> |
|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Officers E/S    | 19.0        | 19.5        | 19.8        | 19.9        | 19.9        | 19.9        | 19.9        |
| Enlisted E/S    | 173.4       | 175.1       | 177.5       | 179.1       | 181.2       | 183.4       | 183.4       |
| Total E/S       | 192.4       | 194.6       | 197.3       | 199.0       | 201.1       | 203.3       | 203.3       |
| Total Man Years | 192.1       | 194.1       | 197.0       | 198.7       | 200.8       | 203.2       | 203.6       |

The profile displayed above reflects the projected end strength growth during the FY82-88 timeframe. A capped force structure will result in some improvement in the manning of the force.



### SECTION III

#### PREPOSITIONING

This section outlines the Marine Corps position on prepositioning which encompasses both prepositioning equipment on the ground at strategic locations and maritime prepositioning which involves placing equipment aboard ships in forward deployed locations. No aircraft are prepositioned in either program. Aircraft self-deploy or are deployed by strategic airlift.

## MARITIME PREPOSITIONING

Briefly, this concept enhances Marine Corps capability as a force in readiness by enabling a Marine Air-Ground Task Force to be deployed by strategic airlift and link up with combat supplies and heavy equipment prepositioned in multipurpose cargo ships (TAKX), located near likely contingency areas.

Maritime prepositioning consists of two strategic mobility enhancement initiatives, the Maritime Prepositioning Ships (MPS) program and the Near-term Prepositioning Force (NTPF) program.

- ° The NTPF is comprised of 17 vessels. Six are designated as 7th MAB Outfitting, formerly known as the NTPS, and 11 are depot ships (with two tanker priority to 7th MAB).

- ° 7th MAB, organized to deploy in conjunction with the NTPF is task organized not only to provide extensive ground tactical mobility and firepower but also air power through its integral aircraft group.

- ° The MPS program is derived from an August 1979 Amended Program Decision Memorandum and subsequent OSD guidance. It provides for acquisition of ships to afloat preposition selected equipment and supplies for three brigade-sized MAGTFs.

- ° Each MPS MAB's equipment will be embarked in four or five specially designed ships which will have Roll-on/Roll-off, breakbulk and tanker capabilities, limited on-board maintenance facilities, and pierside or limited over-the-shore offload capabilities. The equipment will support a MAB heavy in mechanized assets including tanks, assault amphibians, and self-propelled artillery.

- ° As a primary mode of rapid response, MPS is designed for unloading in a service port/beach with an airfield in proximity. The concept also provides a means to rapidly reinforce previously committed forces and thus complements an amphibious forcible entry capability.

- ° Current planning and procurement efforts target the first MPS brigade for calendar year 1984, and one additional brigade each in fiscal years 85 and 86.

This enhancement of the deployability of Marine forces, which have traditionally been maintained in the highest state of readiness, will provide readily available packages of combined arms for use by the National Command Authorities over a broad range of options.

### NORWAY PREPOSITIONING

Prepositioning in Norway facilitates the rapid reinforcement of the critical northern flank of NATO and provides sustainability in selected supply categories by prepositioning selected equipment for a MAB.

The program involves the prepositioning of selected, additive equipment and 30 days of supply in Norway. Specifically identified for Marine Corps prepositioning are low maintenance, high consumption ground munitions, subsistence items, selected principle end items (PEI), construction and barrier material, selected medical supplies, and requisite repair parts. Associated transportation and storage costs are also included.

A bilateral storage agreement was signed in October 82, and initial deliveries of equipment and supplies commenced in November 82 (ground ammunition). Additional deliveries are planned during calendar year 83, including aviation ground support equipment, trucks, and M198 howitzers.

Prepositioning in Norway expands the strategic options available to the National Command Authorities for the rapid reinforcement of NATO. The program, when completed, will provide a credible, sustainable force capable of executing current plans with minimal reliance on existing strategic airlift. The program reduces closure time from weeks to days.



## SECTION IV

### GROUND COMBAT

This Section is composed of those program areas associated with the mission area of GROUND COMBAT. Programs included under the heading of GROUND COMBAT are:

MK-19 MOD3 40mm Machine Gun

M249 5.56mm Machine Gun

Assault Rocket Launcher

M1E1 Main Battle Tank (MBT)

Mobile Protected Gun System (MPGS)

Light Armored Vehicle (LAV)

Landing Vehicle Tracked (LVT-7A1)

M-198 155mm Howitzer

TOW PIP

Modular Universal Laser Equipment (MULE)

Marine Corps NBC Defense Program

Personal Defense Weapon (9mm Pistol)





DESCRIPTION: Crew served, automatic grenade launcher capable of engaging Light Armored Vehicles (LAVs) and infantry from 65 meters to 2200 meters. Weapon weighs 75.6 pounds, will be mounted on the M151 1/4 ton truck, as an interim measure until the High Mobility Multi-Purpose Wheeled Vehicle (HMMWV) is fielded. It may be used on the LVTP-7A1. Weapon fires a high-explosive, dual purpose (HEDP) round - the M430 - which can penetrate 2 1/2" of Rolled Homogeneous Armor (RHA).

PROCUREMENT PROFILE:

|            | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> | <u>FY88</u> | <u>FY89</u> |
|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <u>QTY</u> | 570         | 200         | 125         | 150         | 111         | 200         | 186         |

WHY IS IT IMPORTANT? The MK-19 is being introduced to counter the growing numbers of infantry fighting vehicles with which potential enemies are equipping their forces. The addition of twelve MK-19s in each infantry battalion will increase its organic firepower by 15 percent, and will allow the anti-tank weapons to concentrate their fires on tanks, rather than on LAVs. Maximum effective range of the MK-19 against point targets is approximately 1600 meters.

WHAT IS MARINE CORPS POSITION? Procure the weapon as rapidly as possible.

DEVELOPER/MANUFACTURER: Being developed by Naval Ordnance Station, Louisville, KY.

M249 5.56 MACHINE GUN



MACHINE GUN, 5.56MM, XM249E1

(W/AMMO BOX)

DESCRIPTION: Individually portable, gas operated, magazine or belt fed, light machine gun that will replace the M16 as the automatic rifle in the fire team. It will increase the firepower of Marine infantry units, with a capability of engaging point targets out to 800 meters, firing the improved, NATO standard 5.56mm cartridge (XM855).

PROCUREMENT PROFILE:

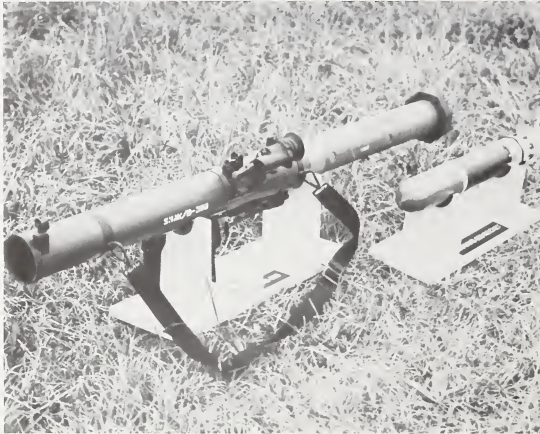
|     | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> | <u>FY88</u> | <u>FY89</u> |
|-----|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| QTY | 2,907       | 1,000       | 1,000       | 1,000       | 1,000       | 950         | 0           |

WHY IS IT IMPORTANT? A weapon which provides aimed and suppressive fire at extended ranges is needed in the fire team. The current automatic rifle does not have the sustained fire and extended range capabilities to provide Marine infantry firepower to equal that of anticipated threat forces. The M249 provides the required improvement in sustained rate of fire (100 rds/minute) and has a maximum effective range of 1000m against area targets. The procurement of this weapon will put the Marine Corps on an equal footing with threat forces equipped with RPK and PKT machine guns.

WHAT IS MARINE CORPS POSITION? Procurement of the weapon began in FY82. Continue procurement to acquisition objective.

DEVELOPER/MANUFACTURER: The Marine Corps and U. S. Army have chosen the MINIMI manufactured by Fabrique Nationale of Belgium.

## ASSAULT ROCKET LAUNCHER



DESCRIPTION: The Assault Rocket Launcher is a man-portable assault weapon to be employed at the rifle company level. It is capable of defeating field fortifications (bunkers), urban targets (concrete/masonry) and has a secondary capability of destroying light armor. It employs a dual-mode warhead which automatically discriminates between relatively soft targets (earth/logs/sandbags) and hard targets (concrete/masonry/light armor) functioning in the delay mode against the soft targets and in the immediate detonation mode against the hard targets.

### PROCUREMENT PROFILE:

|     | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> | <u>FY88</u> | <u>FY89</u> |
|-----|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| QTY | 225         | 600         | 600         | 600         | 202         | -0-         | -0-         |

WHY IS IT IMPORTANT? The Marine Corps currently does not possess a man-portable assault weapon capable of defeating field fortifications and urban targets. This weapon's secondary capability to defeat light armor allows units to employ their anti-tank weapons against tanks and heavier armor.

WHAT IS THE MARINE CORPS POSITION? Procure the Assault Rocket Launcher beginning in FY83.

DEVELOPER/MANUFACTURER: Warhead - NSWC Dahlgren.  
Launcher - McDonnell Douglas Astronautic Co., Titusville, FL.

M1E1 MAIN BATTLE TANK  
(MBT)



DESCRIPTION: The M1E1 MBT will be an improved version of the Army's M1 which is currently being fielded. The M1E1 will weigh 60 tons but will exert only 13.4 PSI in ground pressure. Like the M1 it will be powered by a 1500 HP air-cooled, regenerative turbine engine. The most significant improvements over the M1 will be the 120mm stabilized cannon and improved armor protection.

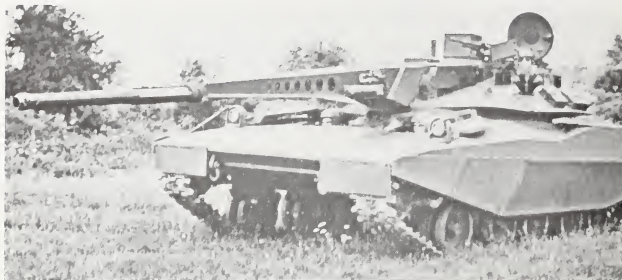
PROCUREMENT PROFILE: TBD

WHY IS IT IMPORTANT? The M60A1, our current MBT, will reach its 15th year of service in the early 1990s. Since the M60A1 embodies basically 1960s technology it is essential that consideration be given to improving our MBT capability. In the early 1990s the M1E1 will represent the most advanced/survivable MBT available. Acquisition of the M1E1 would represent a major upgrading of the armor capabilities within the Marine Corps. Increased armor protection, improved fire control, greater speed and agility, and increased firepower will enhance the combat capabilities and survivability of this MBT.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps is evaluating all options for improving our MBT capability. The M1E1 is an obvious option and is in keeping with our previous policy of adopting the Army's MBT.

DEVELOPER/MANUFACTURER: General Dynamics Corporation

MOBILE PROTECTED GUN SYSTEM  
(MPGS)



DESCRIPTION: The MPGS will be a helicopter-transportable, armor-protected, highly mobile, direct fire weapon system. This system will be capable of defeating armored, personnel, and materiel targets of the 1990s.

PROCUREMENT PROFILE: TBD

WHY IS IT IMPORTANT? The MPGS will give the force commander an added degree of flexibility in providing heliborne assault elements with armor-protected, highly lethal direct fire support. The MPGS will provide tank-like capabilities to assault elements that can not be supported by tanks. Presently, the Marine Corps does not have the capability during heliborne assaults to provide highly mobile and protected firepower against armor. The MPGS will provide the landing force with a significant, protected source of firepower heretofore unavailable. The MPGS program is a joint effort with the Army. The MPGS will be an additive weapon system and will not replace any existing system.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps is committed to a joint development effort with the Army directed toward the fielding of a lethal, highly mobile, direct fire weapon system.

DEVELOPER/MANUFACTURER: TBD

LIGHT ARMORED VEHICLE  
(LAV)



**DESCRIPTION:** The LAV will be a family of helicopter-transportable mission-role vehicles (MRV) built on a common chasis. This family will provide the mobility and firepower for the LAV units to be fielded in each division. The basic LAV (shown above) will be a 14.5 ton 8 x 8 wheeled vehicle mounting an M242 25mm automatic cannon. The LAV will have the capacity to carry six combat-equipped Marines.

PROCUREMENT PROFILE:

|     | <u>FY82</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> | <u>FY88</u> | <u>FY89</u> |
|-----|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| QTY | 60          | 134         | 113         | 117         | 162         | 47          | 21          | 90          |

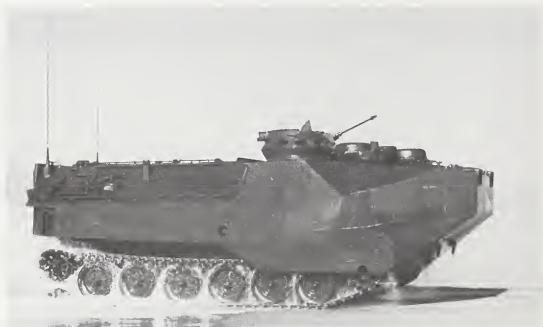
**WHY IS IT IMPORTANT?** The LAV, in its MRV configurations, will provide a new dimension to the force commander's tactical employment concept. At his disposal, the commander will have a fully integrated combined arms unit possessing significant firepower and tactical mobility. Among the configurations under consideration are the following: 25mm Gun, Assault Gun (75mm-105mm), Air Defense, Anti-Tank, Mortar, Recovery, Command & Control, and Logistics.

**WHAT IS THE MARINE CORPS POSITION?** The Marine Corps fully supports the joint endeavor with the U. S. Army to expeditiously field the LAV. A Marine Corps Initial Operational Capability (IOC) is scheduled for February 1984.

DEVELOPER/MANUFACTURER: General Motors of Canada



LANDING VEHICLE TRACKED 7A1  
(LVT-7A1)



**DESCRIPTION:** The LVT7A1 is the result of the Service Life Extension Program (SLEP) of the LVT7. There are three configurations in the LVT7A1 family (i.e., personnel carrier, recovery, and command). In addition to a total rebuild of the LVT7, there are several new improvements incorporated in the LVT7A1. The main improvements include raised headlights, raised commander's station, a new engine, night vision devices, improved suspension, a non-integral fuel tank and an all-electric weapons station. In addition to the SLEP of the 984 LVT7s, 329 new LVT7A1s will be procured primarily for the Maritime Prepositioned Ships (MPS) commitment. The Initial Operational Capability (IOC) for the first LVT7A1 equipped unit is scheduled for FY84.

| <u>PROCUREMENT PROFILE:</u> | <u>FY81</u> | <u>FY82</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|
| SLEP                        | 25          | 149         | 307         | 263         | 240         |
| New Buys                    | --          | 30          | 146         | 153         | --          |

**WHY IS IT IMPORTANT?** The LVT7A1 will replace the LVT7 in providing the lift capability for the surface assault elements of amphibious operations, and in providing armored mobility for subsequent operations ashore. The LVT7A1 will carry 18-25 Marines depending upon their equipment. It will have an operating range of 300 miles on land with a maximum speed of 45mph. At sea, it can operate up to seven hours with a maximum speed of 8mph. Main armament on the LVT7A1 will continue to be the .50 caliber M85 machine gun. The LVT7A1 is essential to insure that the Marine Corps has an effective amphibious vehicle into the 1990's when the follow-on replacement vehicle is expected.

**WHAT IS THE MARINE CORPS POSITION?** The Marine Corps fully supports this effort as mission essential.

**DEVELOPER/MANUFACTURER:** FMC Corporation



M-198 155MM HOWITZER



**DESCRIPTION:** The M198 is a towed 155mm field artillery howitzer. It is constructed of aluminum and steel materials, and is air transportable by CH-53E helicopter and C-130, or larger fixed wing aircraft. The M198 provides increased range, and improved reliability and maintainability over the current standard towed 155mm M114A2. The M198 will be employed as the primary direct support weapon system in each active Marine division.

**PROCUREMENT**

| <u>PROFILE</u> | <u>FY80</u> | <u>FY81</u> | <u>FY82</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> |
|----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Qty            | 154         | 120         | 159         | -           | -           | -           | 52          | 86          |

**WHY IS IT IMPORTANT?** The M198's maximum range of 22,400 meters with conventional ammunition and 30,000 meters using the M549 rocket assisted projectile (RAP) will significantly extend the range, lethality, and counterbattery fires of the direct support artillery battalions. The M198 also provides for system interoperability with the U.S. Army.

**WHAT IS MARINE CORPS POSITION?** Procure the M198 consistent with the current profile.

**MANUFACTURER:** Rock Island Arsenal, Illinois.

TOW PIP



DESCRIPTION: This program consists of two phases: (a) Improved TOW (I TOW) which will retrofit 1800 missiles with an improved 5" warhead, and (b) TOW II which will retrofit an additional 2146 missiles with a 6" warhead and also modify the guidance system giving it protection from obscurants and Electronic Counter Measures (ECM). Additional buys of TOW II and AN/TAS-4 night sights are also programmed to complete the acquisition objective which increased due to the force structure initiatives which doubled the number of TOW systems within the USMC.

PROCUREMENT PROFILE:

|     | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> | <u>FY88</u> | <u>FY89</u> |
|-----|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| QTY | 1,000       | 2,200       | 3,822       | 4,014       | 6,515       | 6,725       | 6,933       |

WHY IS IT IMPORTANT? These improved missiles will permit Marine infantry units to defeat advanced Soviet armor and will enhance Marine infantry's anti-armor capability on the battlefield.

WHAT IS MARINE CORPS POSITION? Procure the improved TOW II missile as rapidly as possible.

MANUFACTURER: Hughes

## MODULAR UNIVERSAL LASER EQUIPMENT (MULE)



**DESCRIPTION:** The Modular Universal Laser Equipment (MULE) is a man-packed, battery powered, functionally modular device designed to provide forward observers the capability to accurately determine location and range to targets and to provide laser designation for all surface and air delivered laser guided munitions. The MULE will consist of three basic modules. The Laser Designator Rangefinder Module (LDRM) contains the basic laser designator and ranging equipment and is designed for hand-held employment when utilized as an independent unit. The Stabilized Tracking Tripod Module (STTM) provides the stabilization necessary for the tracking of moving targets and targets located at extended ranges. The North-Finding Module (NFM) provides a true north reference.

| <u>PROCUREMENT PROFILE:</u> | <u>FY80</u> | <u>FY81</u> | <u>FY82</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Qty                         | -           | -           | 10          | 115         | 134         | 115         |

**WHY IS IT IMPORTANT?** The Marine Corps requires a precision laser designator/rangefinder to accurately locate targets, and to provide terminal guidance for laser guided munitions. The MULE improves the effectiveness of conventional munitions and provides the forward combat elements with the capability of employing air and artillery laser guided munitions.

**WHAT IS MARINE CORPS POSITION?** Procure the item consistent with the current funding profile to enhance mission performance.

**DEVELOPER/MANUFACTURER:** Hughes Aircraft Company, LDRM and STTM  
Sperry Corporation

## MARINE CORPS NBC DEFENSE

DESCRIPTION: The Marine Corps NBC Defense Program provides the personal protection, collective protection, decontamination/ detection, and warning equipment needed to operate in an NBC environment.

WHY IS IT IMPORTANT? The Marine Corps is marginally capable of performing its mission in a chemical environment. Funding is programmed to procure required equipment, and NBC units within division, wing, and FSSG headquarters have been formed. Primary reasons for this marginal capability are inadequacies in types and quantities of equipment, and deficiencies in training.

Inadequacies are beginning to be redressed by funding of research, the development and procurement of new equipment, and improved unit training. Examples of these developments are improvements in chemical agent prophylaxis, air crew survivability upgrades, lightweight decontamination apparatus, a chemical agent contamination monitor, more effective protective clothing, and improved collective protection systems. The Marine Corps closely monitors these efforts.

Planned improvements in Marine Corps capabilities include procurement of improved personal protective equipment, increasing the capabilities of Marine equipment to operate in an NBC environment, procurement of new chemical agent alarms, and procurement of additional decontamination apparatus.

WHAT IS THE MARINE CORPS' POSITION? These programs reflect mandatory acquisition which will enhance the Marine Corps' NBC posture.



PERSONAL DEFENSE WEAPON (Pistol)

DESCRIPTION: A 9mm, lightweight, double action, automatic pistol

| <u>PROCUREMENT PROFILE:</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> | <u>FY88</u> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|
| QTY                         | 6,053       | 9,430       | 30,587      | 22,926      | 4,936       |

WHY IS IT IMPORTANT? The weapon will replace the current .38 and .45 caliber pistols which are at the end of their service lives and are no longer logistically supportable. The weapon will provide increased range, lethality, safety, and interoperability within NATO. The new pistol will provide a significant improvement in readiness due to readily available parts and ammunition.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps requires a pistol procurement program.



## SECTION V

### MARINE CORPS AVIATION PROGRAMS

This section is a compilation of summary papers on the major Marine Corps aircraft and aviation weapon system programs. These papers address modernization and force level issues associated with both tactical aircraft (fixed-wing) and land force aviation (helicopters), as well as an array of anti-armor weaponry, air defense missiles and command and control systems.





**DESCRIPTION:** The AV-8B is a single seat, transonic vectored thrust, light attack aircraft. The AV-8B is capable of increased payloads, extended range, and offers improved reliability and maintainability over the AV-8A. It is manufactured by McDonnell Aircraft and is designed with a vertical/short takeoff and landing (V/STOL) capability to provide increased responsiveness to ground force close air support requirements through basing flexibility and high sortie rates. It will be configured with the Angle Rate Bombing System (ARBS) which will provide an extremely accurate first pass attack capability and high kill probability through the use of passive Laser Spot or TV tracking. The flight test program with the YAV-8B prototype aircraft has been an unqualified success.

**PROCUREMENT PROFILE:**      FY83      FY84      FY85      FY86      FY87

|                |    |    |    |    |    |
|----------------|----|----|----|----|----|
| Aircraft (QTY) | 21 | 32 | 48 | 60 | 60 |
|----------------|----|----|----|----|----|

**WHY IS IT IMPORTANT?** USMC tactical aviation is required to support amphibious and ground forces in a timely and effective manner. As part of tactical aviation, the missions of the light attack aircraft are close air support and interdiction. These missions are performed by the USMC either independently or as part of an expeditionary force, and require close air support aircraft with operational flexibility.

The high degree of mobility inherent in ground combat operation results in rapid changes in the size and location of the battlefield. Consequently, close air support operations by conventional aircraft frequently occur at considerable distances from established airfields and in terrain that is not suitable for construction of conventional support facilities. Thus, combat air support response times, as well as flight times, are greater than desirable with conventional aircraft. V/STOL attack aircraft can rapidly respond to these combat requirements because their flexibility enables them to be based closer to the battlefield.

**WHAT IS THE MARINE CORPS POSITION?** The Marine Corps supports a procurement profile providing aircraft for an all V/STOL light attack force of eight operational squadrons and one training squadron.





DESCRIPTION: The F/A-18 is a twin engine, single pilot, supersonic fighter attack aircraft manufactured by McDonnell Aircraft Company, and major subcontractors Northrop, Hughes, and General Electric. The aircraft will fulfill both air-to-air and air-to-ground mission requirements. It has the capability to be both land and carrier based. The F/A-18 incorporates state-of-the-art technology such as digital fly-by-wire flight controls, multimode radar, and use of lightweight composites to enhance the combat capability and flexibility of the aircraft.

| <u>PROCUREMENT PROFILE:</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> | <u>FY88</u> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Aircraft (QTY)              | 84          | 84          | 92          | 106         | 127         | 153         |

WHY IS IT IMPORTANT? The Marine Corps' requirement for a fighter/attack aircraft is currently fulfilled by the F-4 Phantom. These aircraft are among the oldest in the DON, and beginning in 1982 will be retired due to end of service life. Additionally, the Phantom incorporates 1950s-early 1960s technology which seriously hampers their combat effectiveness against current threat aircraft and air defense systems. The F/A-18 has the capability to accomplish the Marine Corps fighter/attack mission and the adaptability to be effective for the next 20 years.

The Marine Corps currently has three operational squadrons, each with 12 aircraft. VMFA-314, VMFA-323, and VMFA-531 are all located at MCAS El Toro, CA.

WHAT IS MARINE THE CORPS POSITION? The Marine Corps fully supports the F/A-18 program. The F/A-18 has shown potential growth capability into a two-seat, all weather attack variant.

## CH-53E



### DESCRIPTION

The CH-53E is a 3-engine helicopter designed to lift 16 tons over a 50NM combat radius. It has a 79 foot main rotor diameter seven titanium spar main rotorblades, a 20-foot tail rotor diameter that is canted 20 degrees, and a main gear box qualified to 13,140 shaft horsepower. This shipboard compatible helicopter, built by Sikorsky Aircraft, is an assault support aircraft that can be employed for the internal lift and movement of cargo/troops, and for the recovery of tactical aircraft and external lift of equipment and supplies. Fleet introduction commenced in June 1981.

| <u>PROCUREMENT PROFILE</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> |
|----------------------------|-------------|-------------|-------------|-------------|-------------|
| Aircraft (QTY)             | 11          | 11          | 11          | 14          | 14          |

WHY IS IT IMPORTANT? This helicopter is the Marine Corps' heavy lift assault support helicopter and is an integral part of our present helicopter lift force. The CH-53E satisfies the requirement for the tactical movement of heavy weapons and equipment, and provides lift for amphibious assault, retrieval of downed aircraft and damaged equipment, and support for the V/STOL concept and special operations (evacuations, raids, rescue missions).

The Marine Corps currently has two operational squadrons, each with 16 aircraft. HMH-464 is located at MCAS(H) New River, NC, and HMH-465 is located at MCAS(H) Tustin, CA. A training element will activate in October 1983 and the third squadron will be activated in October 1984, both at MCAS(H) Tustin, CA.

The Marine Corps has a recognized requirement for a minimum of six squadrons of CH-53E's to meet the heavy lift demands of a force which will include the M-198 howitzer and its prime mover, the LAV, and the HMMWV in the late 1980's. Fiscal constraints have limited procurement to only three squadrons to date, but efforts will be made to increase funding in the FY85 budget.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps intends to continue aircraft procurement throughout the FYDP, which reflects a 160 aircraft program.

## A-6E



DESCRIPTION: The A-6 is a two-seat, twin engine, long range, versatile, carrier and land based attack aircraft built by Grumman Aerospace Corp. It is capable of very accurate navigation, and delivery of nuclear and conventional weapons from its 5 external stores stations. It has a moving target indicating system and can provide pathfinder/strike leader function for visual attack planes when required. The A-6E incorporates a new microminimized digital computer, a solid state weapons release system and a single integrated track and search radar. The A-6E is the Marine Corps only all-weather, close air support aircraft.

|                             |             |             |             |             |             |             |             |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <u>PROCUREMENT PROFILE:</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> | <u>FY88</u> | <u>FY89</u> |
| Aircraft (QTY)              | 8           | 6           | 6           | 6           | 6           | 6           | 6           |

WHY IS IT IMPORTANT? The A-6E is the Navy/Marine Corps only all-weather, attack aircraft. Since close air support and interdiction strikes must continue in periods of darkness and under adverse weather conditions, the A-6E is an absolute requirement for Marine Aviation.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps supports a procurement profile for an A-6E force level assurance of 19 DON medium attack squadrons (14 USN, 5 USMC).



DESCRIPTION: The EA-6B is a four-place, twin turbojet aircraft with a fully integrated, computer-controlled electronic warfare system. The aircraft, a derivative of the EA-6A, is built by Grumman and is deployable from austere shore bases or aircraft carriers. The EA-6B's ALQ-99 Tactical Jamming System consists of onboard receivers and up to 5 externally mounted ECM pods and is capable of providing electronic countermeasures and tactical intelligence support for MAGTF operations.

| <u>PROCUREMENT PROFILE:</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> | <u>FY88</u> | <u>FY89</u> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Aircraft (QTY)              | 6           | 6           | 6           | 6           | 6           | 6           | 6           |

WHY IS IT IMPORTANT? The Marine Corps requires the EA-6B Tactical Electronic Warfare (EW) aircraft to protect and screen USMC strike force and close air support aircraft. This aircraft denies the enemy effective use of early warning, ground control intercept, surveillance/acquisition, and terminal threat (guns & surface-to-air missile) radars. In addition to tactical battlefield jamming support, the EA-6B provides the Marine Corps with a capability for near real-time intelligence input to the Marine Air Ground Task Force Commander. The EA-6B is essential to aircraft survival on the modern electronically dominated battlefield.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps supports a six per year FYDP procurement profile to assure adequate EA-6B force levels, and to build a 48 USN and 18 USMC EA-6B structure.

GAU 12/U 25mm Gun



DESCRIPTION: The GAU 12/U is a high rate-of-fire gatling gun capable of firing standard NATO/Army 25mm ammunition. It is under development by General Electric for the AV-8B.

PROCUREMENT PROFILE:   FY83   FY84   FY85   FY86   FY87   FY88   FY89

|             |    |    |    |    |    |    |    |
|-------------|----|----|----|----|----|----|----|
| Quantity 1/ | 21 | 32 | 32 | 46 | 47 | 48 | 60 |
|-------------|----|----|----|----|----|----|----|

WHY IS IT IMPORTANT? Firing depleted uranium, armor piercing and high explosive projectiles at a high rate-of-fire, the GAU 12 has wide application against both air-to-ground and air-to-air targets. It will be an invaluable complement to the present and proposed array of anti-armor weapons for Marine TACAIR, and has potential application on attack helicopters.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps strongly supports the GAU 12 for the AV-8B as a multi-purpose gun for anti-armor and air-to-air missions.

1/ The number of guns purchased each year is dictated by the procurement profile for the AV-8B through the FYDP. (One per aircraft.)

LASER MAVERICK  
AGM-65E



Maverick scoring hit on tank target.

DESCRIPTION

Laser Maverick is a short-range, laser-guided, air-to-surface missile for close air support. Laser Maverick, developed by Hughes, consists of a semi-active laser seeker, a 300 pound penetrating blast/fragmentation warhead with cockpit selectable fuze, and a rocket motor with an out-of-line ignition device to satisfy ship-board safety requirements. The warhead, fuze, rocket motor and launcher are common to the Navy's IR attack weapon. Tests have resulted in 15 missile successes for 15 launches.

| <u>PROCUREMENT PROFILE:</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> | <u>FY88</u> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Missiles (QTY)              | 12          | 165         | 185         | 500         | 610         | 650         |

WHY IS IT IMPORTANT? Laser Maverick is the only weapon under development that satisfies the long standing Marine requirement for a standoff guided missile for use by TACAIR in close air support. The large (300 lb) warhead and terminal laser guidance give the ground commander the ability to positively identify and destroy a broad spectrum of targets, ranging from heavy armor to fortified bunkers. It can be loaded on the A-4M, AV-8B, F/A-18, and A-6E aircraft.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps supports the current procurement profile which provides an IOC of FY85.

## GATOR



GATOR Dispenser Mounted on Aircraft

### DESCRIPTION

GATOR (CBU-78) is an air-scatterable land mine weapon. It weighs 500 lbs and utilizes a modified MK 7 (ROCKEYE) container that normally will hold 45 anti-tank mines and 15 anti-personnel mines. GATOR has completed TECHEVAL/OPEVAL and is scheduled to receive ALP in FY-83.

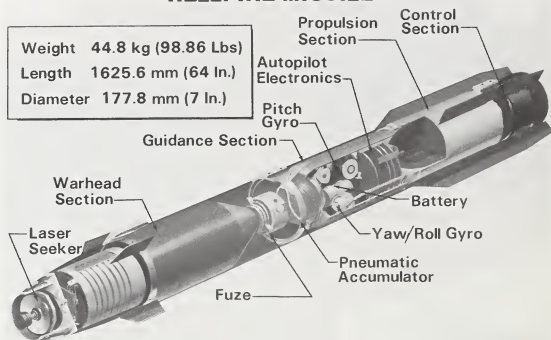
| <u>PROCUREMENT PROFILE:</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> | <u>FY88</u> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| QTY                         |             | 405         | 1012        | 1569        | 1569        | 1569        |

WHY IS IT IMPORTANT? GATOR is the only near-term weapon that provides the capability to channelize or slow attacking enemy armor beyond the range of artillery. Fast minefield emplacement and adjustable self-destruct times will help the ground commander in fast changing tactical situations.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps supports a procurement profile starting in FY84 which would provide the GATOR to the FMF in FY85.

## HELLFIRE

### HELLFIRE MISSILE



**DESCRIPTION:** Developed by Rockwell International, Hellfire is the primary anti-tank weapon for the Army's AH-64. The 100 pound missile will have a semiactive laser terminal homing seeker. Presently entering production with the Army, the Marine Corps will adopt the missile for use on the AH-1J and AH-1T Sea Cobra attack helicopters.

| <u>PROCUREMENT PROFILE:</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> | <u>FY88</u> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Missile (QTY)               | -           | 219         | 314         | 1042        | 1118        | 1151        |

**WHY IS IT IMPORTANT?** The employment of Hellfire is essential to the success of the Marine Corps' AH-1 helicopter on the high threat battlefield. Hellfire provides an increased standoff capability combined with a considerably improved kill potential over present anti-tank guided missiles. Hellfire's range of 5000 meters compares favorably with TOW's maximum range of 3750 meters. With the indirect fire and lock-on after launch firing modes, Hellfire does not expose the launch aircraft to the enemy during the missile launch and guidance sequence as TOW presently does. Finally, Hellfire's armor penetration/kill potential is greater than that of TOW.

**WHAT IS THE MARINE CORPS POSITION?** The Marine Corps supports the procurement profile for Hellfire through the FYDP to insure an anti-armor standoff capability for Marine attack helicopters.



## TAOC-85



DESCRIPTION: The TAOC-85 program is designed to develop and produce operations modules which, when employed independently or in groups of up to five, provide for air defense and air traffic control and coordination as required by the MAGTF during combat operations. TAOC-85 is being developed by the Litton Corporation.

PROCUREMENT PROFILE: FY83 FY84 FY85 FY86 FY87 FY88 FY89

| QTY (modules) | - | - | - | 8 | 16 | 16 | 8 |
|---------------|---|---|---|---|----|----|---|
|---------------|---|---|---|---|----|----|---|

WHY IS IT IMPORTANT? The TAOC-85 program will replace aging equipment which will be logistically unsupportable in 1985 and beyond. The equipment developed is of modular design. This design allows for the phased introduction of capability into an operating area, and a rapid increase in capability with the addition of identical modules. The TAOC-85 program is essential to the USMC deployment concept. TAOC-85 requires fewer technical personnel to operate. It offers training improvements at a reasonable cost and a reduction in the strategic lift requirement. Availability is increased due to improved system reliability and ease of repair. The TAOC-85 Modules will have the operational capabilities to perform the required functions on the modern battlefield. Procurement profile will provide modules required to equip each Marine Air Control Squadron (MACS) with four modules, to improve Tactical Air Command Center (TACC) capabilities, and to support training.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps supports a procurement profile which provides an IOC of FY88 for TAOC-85.

## IMPROVED HAWK (I HAWK)



### DESCRIPTION

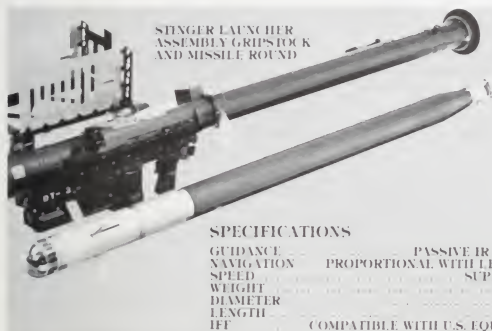
Improved HAWK (I HAWK) is a medium-range, low-to-medium altitude air defense missile system built by the Raytheon Company. It is a mobile, helicopter transportable, all-weather, day and night air defense guided missile weapon system capable of operating in an electronic countermeasures (ECM) environment.

| <u>PROCUREMENT PROFILE:</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> | <u>FY88</u> | <u>FY89</u> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| QTY (missiles)              | 211         | 400         | 440         | 425         | 447         | 1103        | 1124        |

WHY IS IT IMPORTANT? I HAWK is the Marine Corps' primary low-to-medium altitude air defense capability. It is organic to the Light Antiaircraft Missile (LAAM) Battalion which has the assigned mission of providing surface-to-air missile defense of assigned areas of operation, or installations and vital zones, against hostile low and medium altitude air attacks.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps' supports the procurement of sufficient I HAWK equipment to TRIAD configure each LAAM Battalion (three firing batteries each with three launcher sections). The Marine Corps also supports the procurement of I HAWK missiles to build 60 days of combat sustainability.

## STINGER



## DESCRIPTION

STINGER is a man-portable, visually aimed, shoulder fired, surface-to-air defense weapon system designed to counter the low altitude air threat. The weapon, built by General Dynamics, can engage jet and helicopter aircraft from from all aspects, including head-on, to provide a true point defense capability. STINGER

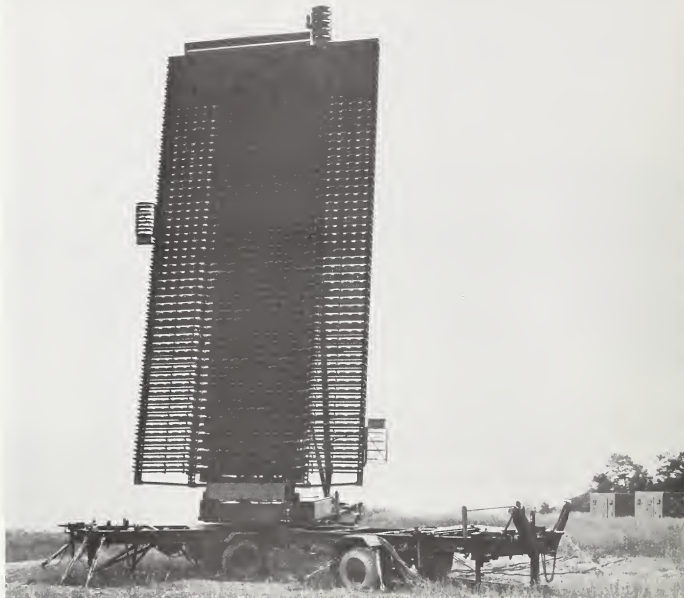
employs a passive infrared homing missile with an advanced guidance system which assures precision intercepts forward of the jet plume of high-speed aircraft. The STINGER system is designed to meet the air threat of the 1980's. It also incorporated an IFF interrogator and advanced infrared countermeasures circuitry.

## PROCUREMENT PROFILE: FY83 FY84 FY85 FY86 FY87 FY88 FY89

|               |      |     |      |      |      |      |      |
|---------------|------|-----|------|------|------|------|------|
| QTY (missile) | 1560 | 706 | 1312 | 1591 | 1646 | 2507 | 2565 |
|---------------|------|-----|------|------|------|------|------|

WHY IS IT IMPORTANT? STINGER will replace the aging REDEYE missile system which has greatly exceeded its seven year shelf life. Additionally, STINGER will eliminate inherent limitations which currently exist in the REDEYE system. This system provides the only close-in, low altitude air defense capability for maneuvering combat elements.

WHAT IS MARINE CORPS POSITION? The REDEYE missile, because of its age and limitations, must be replaced by STINGER as soon as possible. The success of maneuvering combat elements relies heavily on the STINGER system and its capability to defend against the ever increasing low altitude threat.



DESCRIPTION: The AN/TPS-59 is a 3D, long range, air surveillance radar used with Marine Air Control Squadrons.

PROCUREMENT PROFILE:    FY83    FY84    FY85    FY86    FY87    FY88

|             |    |   |   |   |   |   |
|-------------|----|---|---|---|---|---|
| QTY (units) | 10 | - | - | - | - | - |
|-------------|----|---|---|---|---|---|

WHY IS IT IMPORTANT? The AN/TPS-59 was developed for the Marine Corps and represents the leading edge of radar technology. The radar is an all solid state, long range three dimensional air search radar that demonstrates a reliability far in excess of equipment in the field today. The radar incorporates a 300 mile capability which is consistent with the operational requirement. The TPS-59 is the primary radar input for the TAOC-85. IOC is January 1985.

WHY IS MARINE CORPS POSITION? The Marine Corps strongly supports the TPS-59 radar and considers it essential to operations in the high threat sophisticated electromagnetic environment of the modern battlefield.

## JVX

### DESCRIPTION

The Joint Service Advance Vertical Lift Aircraft (JVX) is a tri-service program which will fill the need for common, self-deployable transports. It is designed to meet the Army Airborne Intelligence and Electronic Warfare corps and division missions, Army corps Aeromedical Evaluation, Navy and Air Force Combat Search and Rescue, Air Force Special Operations Force and Marine Corps Assault Vertical Lift missions. JVX will be a 250 knot cruise tilt rotor aircraft, providing the most cost and combat-effective replacement for the fleet of aging CH-46E and CH-53A/D assault helicopters.

PROCUREMENT PROFILE:   FY84   FY85   FY86   FY87   FY88   FY89

|                |      |          |
|----------------|------|----------|
| Aircraft (QTY) | 18   | 18       |
|                | Long | Procure- |
|                | Lead | ment     |
|                |      | 42       |
|                |      | Long     |
|                |      | Lead     |

WHY IS IT IMPORTANT? The existing inventory of CH-46E and CH-53A/D helicopters is declining due to normal attrition. It is not only costly to operate and maintain due to aging, but it also lacks adequate battlefield performance to execute rapid assault. In order to meet mission objectives for the 1990's and beyond, and to avoid further increases in manpower and dollar costs, replacement assault transports with significantly increased capabilities are required. Deliveries of Marine Corps JVX assault transports are urgently required starting in FY91 to avert a critical shortfall in assault vertical lift capabilities. These modern replacements will provide a quantum increase in battlefield capabilities.

WHAT IS THE MARINE CORPS POSITION? The JVX program, managed by the Navy for the joint services, has an acquisition strategy which is paced by the Marine Corps' urgent need for fleet deliveries during FY91. The Marine Corps position is that delivery of JVX in accordance with that schedule is a vital component of the modernization of Marine Aviation and is required to avert unacceptable assault lift shortfalls in the early 1990s.

AVIATOR'S NIGHT VISION SYSTEM (ANVIS) AN/AVS-6



DESCRIPTION: The ANVIS system provides an image intensifier specifically designed for aviators. The system provides a light-weight design, "look-around" peripheral vision, easy installation, and enhances safe aircraft operation during night operations at very low ambient light levels.

| <u>PROCUREMENT PROFILE:</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> |
|-----------------------------|-------------|-------------|-------------|-------------|
| ANVIS (QTY)                 | 118         | 449         | 531         | 157         |

WHY IS IT IMPORTANT? ANVIS provides the helicopter aviator the capability, under low ambient light conditions, to fly low and fast almost as if in daylight conditions. This provides a significant capability for night operations in a hostile environment without the use of external light sources.

WHAT IS THE MARINE CORPS POSITION? That sufficient goggles be procured for helicopter aircrews as rapidly as possible and that the use of ANVIS in high performance aircraft be evaluated

## SECTION VI

### COMMAND, CONTROL, COMMUNICATIONS AND INTELLIGENCE

This section outlines command, control, communications, and intelligence (C<sup>3</sup>I) programs designed to enhance the Marine Corps' capability to perform its assigned mission. The Marine Air Ground Task Force (MAGTF) has a unique C3 capability. MAGTFs are organized, equipped and trained under the concept of unity of command which gives the commander a complete capability to control all elements including ground combat, aviation and logistics. Additionally, the MAGTF is equipped with the capability to provide austere external communications links with the Naval Telecommunications System (NTS)/Defense Communications System (DCS) and with adjacent U.S. or allied units if required.

The Marine Corps is in the process of fielding the following new communications and intelligence equipment to support C3I.

#### ° Communications:

- °° Marine Integrated Fire and Air Support System (MIFASS)
- °° Position Location Reporting System (PLRS)
- °° NAVSTAR GPS
- °° IBM S/360 Computer Replacement Program
- °° The Bancroft, TSEC/KY-67 Tactical Security Equipment
- °° The Digital Communications Terminal (DCT)
- °° Joint Tactical Information Distribution System (JTIDS)
- °° Radio Set AN/PRC-113 UHF
- °° TRITAC Switches
- °° ADPE for Supporting Establishment
- °° FASC Replacement Program
- °° Tactical Combat Operations (TCO) System

#### ° Intelligence:

- °° Forward Pass
- °° Team Portable Direction Finder (TPDF)
- °° Integrated Signals Intelligence System (ISIS)



- °° Intelligence Analysis Center (IAC)
- °° Radio Battalion Modification Program





## MARINE INTEGRATED FIRE AND AIR SUPPORT SYSTEM (MIFASS)



DESCRIPTION: The Marine Integrated Fire and Air Support System is a selectively automated tactical command and control system that will facilitate the coordination of mortars, artillery, naval gunfire and direct air support, to provide more effective and responsive fire support for ground maneuver forces. MIFASS will provide an automated system for the technical fire direction of artillery and mortars. MIFASS also will provide an automated capability for fire planning with associated weapons and target information management for infantry, aviation and artillery combat operation centers. It will distribute battlefield geometric information such as boundaries, coordination lines and areas, friendly unit locations and air defense data. MIFASS will also transmit time-sensitive target information to appropriate command levels. MIFASS is designed so that selected components may be employed at all echelons of the MAGTF. It will be located at the MAGTF Headquarters, the Division, the infantry and artillery regiments, and at infantry and artillery battalions.

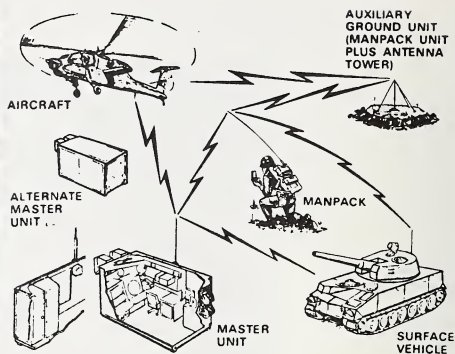
| <u>PROCUREMENT PROFILE:</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> | <u>FY88</u> | <u>FY89</u> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Qty                         | -           | -           | 1/2         | 1           | 1           | 1           |             |

WHY IS IT IMPORTANT? Current manual operations in the coordination and control of supporting arms create delays in providing fire support to maneuver elements. The manual operations are often characterized by mistakes, delays, and the improper use of supporting arms. The MIFASS will help to overcome these deficiencies.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps is developing an engineering model and will consider procurement with an initial operational capability (IOC) planned for 1987.

DEVELOPER/MANUFACTURER: The prime contractor is Norden Systems.

## POSITION LOCATION REPORTING SYSTEM (PLRS)



DESCRIPTION: Joint USA-USMC Program. The PLRS system consists of a master station in a mobile shelter, a duplicate alternate master station, and up to 370 user units, which may be man, vehicle, or aircraft transported. The master station consists of standard military computers and a tactical display; the user unit consists of a hand-held user readout that displays position information and limited free text messages. The System is cryptosecure and jam resistant. The PLRS will greatly improve tactical operations by providing accurate (30 meters for ground users, 100 meters for air) position location information on friendly units. Small units, vehicles and aircraft will be able to determine rapidly their own position and that of adjacent and higher units in reduced visibility and featureless terrain. Position location information is automatically reported throughout the network.

| <u>PROCUREMENT PROFILE:</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> | <u>FY88</u> | <u>FY89</u> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Systems (Qty)               | 2           | 2           | 1           | 1           |             |             |             |
| Sole-Source                 |             |             |             | 1           | 2           | 2           | 2           |
| Competitive                 |             |             |             |             |             |             |             |

WHY IS IT IMPORTANT? With these enhanced capabilities, commanders at company, battalion and brigade level will be better able to maneuver their forces and to provide accurate, and timely fire and air support to them.

WHAT IS THE MARINE CORPS POSITION? In conjunction with the Army, to award an initial sole source, four year, multi-year contract for the purchase of 11 1/2 systems (6 for the Marine Corps and 5 1/2 for the Army). The Marine Corps inventory objective is 13 systems (3 per MAF and 1 system for software support and training). An initial operational capability is planned for April 1986.

DEVELOPER/MANUFACTURER: Hughes Aircraft Company

## NAVSTAR GLOBAL POSITIONING SYSTEM (GPS)

DESCRIPTION. The NAVSTAR GPS is a satellite-based radio navigation system that will provide very accurate three-dimensional position and navigation information worldwide. User units will weigh approximately 25 pounds. User equipment in USMC aircraft will be funded by the Navy. The Marine Corps plans to procure 245 manpack terminals.

WHY IS IT IMPORTANT? User equipment will be procured in manpack form for use in anchoring the Position Location Reporting System (PLRS) and in providing coverage outside the effective area of PLRS (47 Km X 47 Km). Additionally, NAVSTAR GPS will provide a position/navigation capability for units operating in less than brigade strength such as a MAU or BLT.

WHAT IS THE MARINE CORPS POSITION? Continue to participate in development on NAVSTAR GPS and to procure manpack user terminals.

| <u>PROCUREMENT PROFILE:</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> | <u>FY88</u> | <u>FY89</u> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|

|     |  |  |  |    |     |     |   |
|-----|--|--|--|----|-----|-----|---|
| Qty |  |  |  | 45 | 100 | 100 | - |
|-----|--|--|--|----|-----|-----|---|

DEVELOPER/MANUFACTURER: Collins Radio and Magnavox

## IBM S/360 COMPUTER REPLACEMENT PROGRAM

DESCRIPTION: This program is for replacement of IBM S/360 computers at the seven largest Marine Corps sites with modern, more capable computers. These sites are at Kansas City, MO; Albany, GA; Quantico, VA; Camp Pendleton, CA; Camp Lejeune, NC; Camp Kinser, Okinawa, JA; and Camp Smith, HI. They support both on-going and new Automated Information Systems (AIS) for Marine Corps functional managers and users. Replacement systems at each site will include a central processing unit, power conditioning equipment, peripherals, and related support services. Contract was awarded in September 1981. Installation has occurred as follows: Kansas City, November 1981; Albany, January 1982; Quantico, March 1982; Kansas City, 2nd CPU, April 1982; Camp Pendleton, June 1982; Camp Lejeune, December 1982. Okinawa and Camp Smith are scheduled for installation during the first quarter of FY84.

| <u>PROCUREMENT PROFILE:</u> | <u>FY82</u>                                   | <u>FY83</u>      | <u>FY84</u>                       |
|-----------------------------|---|------------------|-----------------------------------|
| Amdahl 470 V/7A             | Kansas City (1)<br>Albany (1)<br>Quantico (1) |                  |                                   |
| Amdahl 470 V/7B             | Camp Pendleton (1)<br>Kansas City (1)         | Camp Lejeune (1) | Okinawa (1)<br><br>Camp Smith (1) |

WHY IS IT IMPORTANT? Existing equipment is obsolete, unreliable, and incapable of meeting evolving Marine Corps requirements.

WHAT IS THE MARINE CORPS POSITION? This program is essential to Marine Corps management and AIS operations and is the Marine Corps' highest priority acquisition of automated data processing equipment through FY84.

DEVELOPER/MANUFACTURER: Amdahl  
International Business Machines

TACTICAL SECURITY EQUIPMENT TSEC/KY-67, BANCROFT



DESCRIPTION: The KY-67 is a half-duplex, integrated tactical voice radio/security piece of equipment. The radio portion is VHF/FM, 30-76 Mhz frequency range, providing 1840 radio channels at 25 KHz intervals. The radio is compatible with current and projected VHF/FM radios. It can be utilized as a portable (2 watts output) or vehicle (40 watts output) radio. The communications security equipment is compatible with SAVILLE logic cryptographic equipment. The U.S. Navy is the system and funds manager.

| <u>PROCUREMENT PROFILE</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> | <u>FY88</u> | <u>FY89</u> |
|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Qty                        | 7           | 880         | 1150        | 1080        | 2234        | 2233        | 2233        |

WHY IS IT IMPORTANT? Current inventory radios are old, heavy, and were not designed to current rigid environmental specifications. The BANCROFT provides a lightweight, highly portable, one-man load, secure radio, ideally suited for the Marine infantry. In addition, the vehicular model has been specifically designed for use in amphibious vehicles. The radio will provide the communication links required by Marine Corps tactical command and control systems.

WHAT IS MARINE CORPS POSITION? The Marine Corps strongly supports this program.

MANUFACTURER: Cincinnati Electronics

## DIGITAL COMMUNICATIONS TERMINAL (DCT)



DESCRIPTION: The Digital Communications Terminal (DCT) is a programmable, handheld, input/output device that operates over all current and future tactical radios (less PRC-47) and wireline systems. The DCT is compatible with the BANCROFT and VINSON cryptographic systems. The device weighs 4 lbs and is 100 cubic inches in size. The DCT provides the operator with the capability to rapidly compose, edit, transmit, receive, and display preformatted messages, free text messages and graphic data. The DCT will expand the capabilities of the following systems with its speed and accuracy:

Marine Integrated Fire and Air Support System (MIFASS)  
Direct Air Support Central (DASC)  
Tactical Combat Operations System (TCO)  
Command and Control Communications for FAAD Teams  
Modular Universal Laser Equipment (MULE)

The DCT uses digital "burst" transmission techniques that eliminate common voice repetitive transmissions (such as "Say again," "I spell," "Repeat all after"), and provides positive acknowledgement of message receipt.

| <u>PROCUREMENT PROFILE:</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> | <u>FY88</u> | <u>FY89</u> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Qty                         | 408         | 350         | 232         | 1266        | 1266        | 1266        | 1071        |

WHY IS IT IMPORTANT? The Marine Corps needs to improve its communications in the areas of reliability, accuracy, and speed. The DCT will provide a quantum improvement in these areas.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps must continue to fund the DCT program.

DEVELOPER: LITTON

## JOINT TACTICAL INFORMATION DISTRIBUTION SYSTEM (JTIDS)

DESCRIPTION: JTIDS will provide users with secure, jam-resistant, voice and data communications capabilities. When integrated into a host tactical data system, JTIDS will support high-capacity, near real-time exchange of tactical information and inherent relative navigation, position location, and identification capabilities. The Air Force is developing terminals based on the basic JTIDS technology, Time Division Multiple Access (TDMA). The Navy was authorized by DoD to develop a family of enhanced technology terminals based on Distributed Time Division Multiple Access (DTDMA). Associated with the implementation and employment of JTIDS is the parallel development of Tactical Digital Information Link J (TADIL-J), a message standard being developed by the JINTACCS Program.

| <u>PROCUREMENT PROFILE:</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> | <u>FY88</u> | <u>FY89</u> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Qty Class 1A DTDMA (34)     | -           | -           | -           | -           | -           | 10          | 10          |

WHY IS IT IMPORTANT? Current data communications capabilities supporting tactical command and control information exchange are vulnerable to exploitation and interception and are severely degraded when employed in a jamming environment. JTIDS and TADIL-J will overcome these deficiencies and provide tactical decision makers with survivable, secure, high capacity communications capabilities in support of internal, joint and combined command and control information exchange requirements. If the JTIDS Program is not supported, the joint interoperability capabilities of the Marine Corps, and a significant internal data distribution capability, will continue to rely on outdated and highly vulnerable systems.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps fully supports the expeditious achievement of a joint TADIL-J interface capability. DoD and JCS have established a JTIDS/TADIL-J interface initial operational capability goal of January 1989. The Marine Corps JTIDS/TADIL-J planning schedule and funding requests are based on achieving this goal. The Marine Corps JTIDS/TADIL-J program is designed as a comprehensive effort to provide tactical commanders across the battlefield with jam-resistant, high capacity, voice and data communications. While primary emphasis, of necessity, focuses on the TAO-85 implementation effort, follow-on platform implementations and Marine Corps unique development efforts cannot arbitrarily be deferred without degrading the total capabilities of the integrated Marine Corps command and control system.

DEVELOPER/MANUFACTURER: TDMA: Singer-Kearfott  
DTDMA: TADCOM (HUGHES/ITT)



# RADIO SET AN/PRC-113



DESCRIPTION: The PRC-113 is a ground-air, UHF transceiver which provides 7,000 channels of voice communications (25 Khz channel spacing) over the frequency range 225.0 to 399.5 Mhz. Operating at a selectable 2 or 10 watts of power output, it is a secure voice piece equipment compatible with "HAVE QUICK" ECCM capability. It will replace current AN/PRC-75A UHF equipment.

| <u>PROCUREMENT PROFILE:</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> | <u>FY88</u> | <u>FY89</u> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Qty                         | 1698        | 282         | --          | --          | --          | --          | --          |

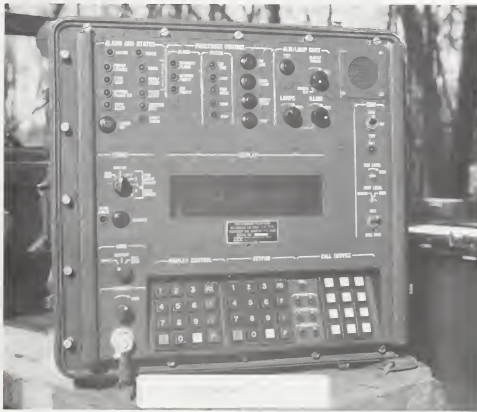
WHY IS IT IMPORTANT? The program will result in a state-of-the-art portable radio set with improved operational and logistical characteristics. The radio set will be fully compatible for use in joint and combined operations and will satisfy the Military Communications Electronics Board's mandatory requirement for 25 kilohertz channel spacing by 1986.

WHAT IS MARINE CORPS POSITION? Procure the AN/PRC-113 UHF radio set, as necessary, in accordance with the above profile.

MANUFACTURER: MAGNAVOX



## TRI-TAC SWITCHES



DESCRIPTION: The TRI-TAC switches are a family of switches being developed under the cognizance of the Joint Tactical Communications (TRI-TAC) Office. They include the SB-3865, AN/GYC-7, and AN/TTC-42.

SB-3865 - A 30-line automatic telephone switching unit stackable to 90-lines. It is man transportable and will service the new family of digital telephones. It will be used at regiment and higher levels within the FMF.

AN/GYC-7 - A 12-line automatic tactical data switch providing secure switching of digital data. It will be configured into 3 two-man tranportable packages and will also be utilized at regiment and higher levels in the FMF.

AN/TTC-42 - A 150-line transportable, shelterized, automatic switching central capable of servicing digital and analog loop circuits and digital trunks. It will interface with the SB-3865. It will be operational within the communications battalion, communications squadron, division communications company, FSSG communications company, and artillery regiment.

| <u>PROCUREMENT PROFILE:</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> | <u>FY88</u> | <u>FY89</u> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|

|         |    |    |     |     |     |     |    |
|---------|----|----|-----|-----|-----|-----|----|
| SB-3865 | -- | 26 | 119 | 123 | 123 | --  | -- |
| GYC-7   | -- | -- | --  | --  | 26  | 131 | 0  |
| TTC-42  | -- | 13 | 16  | 18  | 20  | --  | -- |

WHY IS IT IMPORTANT? The Marine Corps is transitioning from manual, analog, unsecure switches to automatic, digital, cryptographically secure capabilities. The Marine Corps was tasked by ASD C3I to develop a family of unit level switches to satisfy requirements of all Services in the 1980's. The TRI-TAC switches will provide all of the next generation of USMC switches.

WHAT IS MARINE CORPS POSITION? Procure the TRI-TAC switches in accordance with above profile.

AUTOMATIC DATA PROCESSING EQUIPMENT FOR THE SUPPORTING  
ESTABLISHMENT (ADPE-SE) PROGRAM

DESCRIPTION: The ADPE-SE Program is designed to replace obsolescent data processing equipment at 23 Marine Corps Supporting Establishment sites. The Program will also include replacement of current source data automation devices (i.e., Scan-Data Systems), remote job entry devices, computer output microfilm equipment, and stand-alone computer systems used as remote job entry devices. Replacement systems will vary in size and capabilities from simple interactive terminals with low speed printers to large remote job entry systems capable of handling large volumes of batch output and performing independently if necessary. Communications front-end processors and computer output microfilm equipment will also be installed as the result of the ADPE-SE Program.

| <u>PROCUREMENT PROFILE:</u>         | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> | <u>FY88</u> | <u>FY89</u> |
|-------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Communications Front-end Processors | 5           | 2           | -           | -           | -           | -           | -           |
| Computer Output Microfilm Equipment | -           | 10          | -           | -           | -           | -           | -           |
| Interactive Terminals               | -           | 200         | 200         | -           | -           | -           | -           |
| Minicomputer Systems                | -           | 12          | 11          | -           | -           | -           | -           |

WHY IS IT IMPORTANT? The automatic data processing equipment that is currently installed is old, unreliable, and very expensive to maintain. In most cases, current equipment lacks sufficient capabilities to support new Marine Corps automated information systems currently under development. Many sites also do not have any interactive data processing capability. This equipment will be installed to support users throughout the Marine Corps.

WHAT IS THE MARINE CORPS POSITION? The ADPE-SE Program is essential to the development and implementation of on-line, interactive automated information systems and is a priority automatic data processing equipment acquisition in the FY 83-85 time frame.

DEVELOPER/MANUFACTURER: It is anticipated that the communications front-end processors will be purchased from the NCR/COMTEN Corporation. Manufacturers of equipment falling in the other three categories are yet to be determined.

## FORCE AUTOMATED SERVICES CENTER (FASC) REPLACEMENT PROGRAM

**DESCRIPTION:** This program consists of an interim and a long-term strategy to replace the FASC's current IBM 360/50 computer systems. FASC's current computer systems do not have the capability to rapidly deploy in support of Marine expeditionary forces. These IBM systems are no longer in production and are becoming more difficult and more expensive to maintain. They require more power to operate and more air conditioning to cool than today's modern computer systems.

Interim FASC Replacement provides for procurement of three van-mounted computer systems during FY83-84. The concept of a self-contained, van-mounted FASC will be tested during deployment exercises. Operational test and evaluation is scheduled for completion in FY85. The results of these tests will be analyzed and refined to develop competitive specifications so that, if required, up to nine deployable FASCs may be procured.

Long-term FASC Replacement is directed toward a capability to support new Automated Information Systems (AISs) while deployed.

**WHY IS IT IMPORTANT?** Operation of Class I systems (standard AISs in use Marine Corps-wide) for deployed Marine Corps units must be supported by a deployable FASC, which is similar in function to the Automated Services Center which supports non-FMF units.

FASCs must have the capability to rapidly relocate to provide support to deployed Marine Air-Ground Task Forces (MAGTFs). FASCs depend upon the Marine Corps Central Design and Programming Activities (MCCDPAs) for programming and technical support. The MCCDPAs will transition to new operating systems during FY83. As the new operating systems are implemented, support of the older operating systems now in use on the current FASC equipment will be reduced. The existing FASC equipment will be incorporated into local base processing systems to augment their systems.

When new AISs now under development, such as REAL FAMMIS, SABRS, and M3S, are implemented, new hardware to support these AISs will be required in the final FASC configuration.

**WHAT IS THE MARINE CORPS POSITION?** This program is essential to Marine Corps management and AIS operations in a deployed or combat environment. It will be the highest priority acquisition of auto-

## TACTICAL COMBAT OPERATIONS SYSTEM (TCO)

DESCRIPTION: The TCO System is a tactical command and control system that provides semi-automated support to the MAGTF. This system will provide selective automated support to assist commanders in the accomplishment of their planning, operations and intelligence functions. The TCO System will provide a capability to receive, process, store, display and transmit information to assist in the accomplishment of the planning, operational control and intelligence functions. TCO will provide planners and decision makers with more coherent, more accurate, and more timely information on which to make necessary plans and decisions. The TCO System will be employed at all echelons of the MAGTF. It will be located in operations centers at all levels of command in the MAGTF.

| <u>PROCUREMENT PROFILE:</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> | <u>FY88</u> | <u>FY89</u> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Qty                         | -           | -           | -           | -           | 1           | 1           | 2           |

WHY IS IT IMPORTANT? Without the TCO System, bottlenecks will occur when modern sensor and communications systems overwhelm manual processing capabilities at the command operation centers. The present manual operations of the operation centers are inadequate for the sophisticated battlefield of the future.

WHAT IS THE MARINE CORPS POSITION? Develop the TCO system as rapidly as possible in order to reach an initial operational capability in 1989.

DEVELOPER/MANUFACTURER: Norden Systems

## FORWARD PASS



DESCRIPTION: Forward Pass is a ground sensor data storage and relay device which works in conjunction with the Marine Corps Tactical Remote Sensor System. It consists of storage, interrogation, and display units.

- ° The storage unit is emplaced by hand or high speed aircraft along with the unattended ground sensors. It collects and stores data from sensors and can be commanded to operate in various modes from real-time relay to burst transmissions.

- ° The interrogation unit is pod mounted on high speed aircraft with a control box in the cockpit. This allows the pilot to interrogate five storage units in a

single mission while retaining the option of concurrently carrying out other requirements. A readout command is sent from the aircraft to a particular storage unit. Upon command the unit either transmits its stored data to the interrogation unit where it is recorded or data linked to a ground site. If time is not a critical factor, upon return of the aircraft to a carrier or rear base, the interrogation unit memory is removed and delivered to the display unit. Other cockpit-generated commands include relay (go to real-time relay mode), store, reset (erase data, go to new storage sequence), or a combination of these.

- ° The display unit processes the data into a form usable by the analyst.

WHY IS IT IMPORTANT? Forward Pass provides a capability to obtain remote sensor derived intelligence without the need for continuous monitoring and solves the RF line of sight relay problem. Its principal use will be in amphibious operations during the time intervals preceding the assault phase. The concept is to employ remote sensors in the amphibious objective area (AOA) days or weeks preceding the prospective operations.

WHAT IS MARINE CORPS POSITION? The Marine Corps will procure three Forward Pass Systems, two in FY87 and one in FY88.

DEVELOPER: Naval Aviation Center, Indianapolis, Indiana

TEAM PORTABLE DIRECTION FINDER (TPDF)

DESCRIPTION: The TPDF is a light-weight VHF DF system designed to provide position fixes on enemy VHF transmitters.

| <u>PROCUREMENT PROFILE:</u> | <u>FY82</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| QTY                         | 9           | 14          | --          | --          | --          | --          |

WHY IS IT IMPORTANT? The Marine Corps has a requirement to replace the vehicle and team portable DF equipment presently in the Radio Battalion inventory. The present systems are aged, difficult to maintain, highly inaccurate, and require highly skilled operators to derive any useful information. The standing requirement is for a highly mobile system designed to operate against low level communications systems of potential hostile forces.

WHAT IS THE MARINE CORPS POSITION? Without this system, the Marine Corps will not have a DF system capable of meeting even the minimum performance standards of accuracy and reliability, hence, the ability to satisfy the DF requirements essential to support SIGINT/EW collection activities would be virtually nonexistent.

DEVELOPERS: Electromagnetic Systems Lab, Inc. (ESL Inc.) Sunnyvale, CA and Watkins Johnson.

## INTEGRATED SIGNAL INTELLIGENCE SYSTEM (ISIS)

DESCRIPTION: The ISIS currently under development is a modular, transportable, semi automated system of communications intercept, direction finding, and tactical SIGINT analysis and reporting. This system integrates mini/microcomputer processing with current intercept receiver and radio direction finding (DF) technologies to increase tactical communications intercept, DF, and analysis and reporting efficiency. The ISIS is intended to replace all existing transportable communications signal intercept and DF equipment in the Radio Battalions less the team transportable and manpack equipment. ISIS provides each Radio Battalion with four intercept DF SIGINT analysis and reporting equipment combinations and three additional SIGINT analysis and reporting equipment sets. An intercept DF, SIGINT analysis and reporting equipment combination consists of three Communications Collection Outstations (CCO), a Communication Collection Facility (CCF), and a Stand Alone Analysis Subsystem (SAAS), which in total supports twelve intercept/DF positions, two transcription positions, and seven analysis and reporting positions.

| <u>PROCUREMENT PROFILE:</u> | <u>FY82</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| QTY                         | --          | --          | -           | 1           | 1           | --          |

WHY IS IT IMPORTANT? With the advent of increased battlefield electronics usage and the increased tempo of combat, the Marine Corps considers computer assistance to tactical SIGINT, as incorporated in the ISIS, to be crucial to future Radio Battalion SIGINT support to battlefield commanders. If the ISIS is not available in the field in the late 1980's timeframe, the Marine Corps will no longer have a viable SIGINT direct support capability.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps has a vital requirement for tactical SIGINT direct support at battalion and above. This support must be tailored to the battlefield commander's intelligence needs during all phases of amphibious operations and subsequent operations ashore. ISIS meets these requirements and system development and procurement is essential to ensure viable SIGINT direct support and to overcome current deficiencies.

MANUFACTURER: Sanders Associates Inc., Nashua, NH



## INTELLIGENCE ANALYSIS CENTER (IAC)

DESCRIPTION. The Marine Air-Ground Intelligence System (MAGIS) consists of equipment, procedures, techniques, and trained personnel. It is employed by the Marine Air-Ground Task Force (MAGTF) as a tactical intelligence system. MAGIS consists of modular segments housed in mobile, air-transportable shelters, which can be moved by organic MAGTF assets. MAGIS segments include the Imagery Interpretation Segment (II), Imagery Processing Segment (IP), Tactical Electronic Reconnaissance Processing and Evaluation System (TERPES), Integrated Signals Intelligence System (ISIS), and the Intelligence Analysis Center (IAC).

The IAC is the heart of MAGIS. Information from the MAGIS segments, as well as information from both national and conventional agencies, enters the IAC for processing into intelligence. The IAC's purpose is to satisfy a long-standing, operational requirement for a semiautomated, tactical intelligence capability which will enable intelligence staffs to accomplish the following tasks: process large quantities of information collected into timely and accurate intelligence; quickly disseminate finished intelligence; and, more effectively manage the collection effort.

| <u>PROCUREMENT FILE:</u> | <u>FY82</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> |
|--------------------------|-------------|-------------|-------------|-------------|
| <u>QTY</u>               | <u>4</u>    | <u>2</u>    | <u>1</u>    | <u>-</u>    |

WHY IS IT IMPORTANT? Recent developments in communications, reconnaissance, surveillance and target acquisition techniques and equipment have greatly increased the capability of the FMF to collect information of an intelligence nature. The IAC will provide the FMF with the capability to process and disseminate this increased volume of information.

WHAT IS MARINE CORPS POSITION? The Marine Corps will buy 4 systems in FY82, two in FY83, and one in FY84, and one in FY85. An inventory objective of seven will support three Marine Amphibious Forces (MAFs), two Marine Amphibious Brigades (MABs), training and software support requirements.

DEVELOPER: Naval Systems Weapons Center, Dahlgren, VA.

PRODUCTION CONTRACTOR: American Development Corp (ADCOR), Charleston, S.C.



## Radio Battalion Modification Program (RadBn MODS)

DESCRIPTION: Replacement of the existing inventory of Marine Corps tactical SIGINT equipment will not occur until the late 1980's. This program develops modifications and improvements to existing hardware and provides quick action on both unsatisfactory equipment reports and modifications to operational systems.

WHY IS IT IMPORTANT? The AN/TSQ-103 Light Intercept Facility exceeded its service life in FY79. The AN/TSQ-88 Light Signal Monitor Facility will exceed its service life during FY82. The AN/MSC-63 Communications Central is not capable of handling the high volume of Special Intelligence Communications required to support a tactical commander, consequently rendering this system virtually unusable in amphibious operations.

Radio Battalion modifications provide enhanced capability by replacing outmoded internal system components (receivers, recorders, record traffic terminals, cryptologic equipment, etc.) with state-of-the-art technology. In some cases, the modifications increase the intercept capability of the Radio Battalion. In all cases, they quicken the response of the associated system either to threat signals or, in the case of the AN/MSC-63, to the Defense Special Security Communications System. Prime movers, shelters, power requirements, and environmental control units remain generally unchanged.

Under the program, work to date has included completion of an upgraded and modernized prototype for the AN/TSQ-54A (Heavy Intercept Facility), the AN/TSQ-103 (Light Intercept Facility), and the AN/TSQ-68 (Translator/Transcriber Van). Associated operational tests have been completed. Modification of remaining like equipments is ongoing. The current RDT&E funding line, a part of the NSA-managed MFP III Tactical Cryptologic Program, will be used for the product improvement of the AN/MSC-63 (Communications Central). Outyear funds will develop the prototype AN/TSQ-88 (Light Signal Monitor Facility).

The table below outlines the modifications planned:

| <u>NOMENCLATURE</u> | <u>DESCRIPTION</u>  | <u>MODIFICATION</u>   |
|---------------------|---|---|
| A. AN/TSQ-54A       | Heavy Intercept Facility<br>(4 intercept positions,<br>1 supervisory position.) | Replace receivers with<br>digitally tuned, solid-<br>state receivers, improved<br>recorders, antennas, and<br>internal switching<br>capabilities. |

| <u>NOMENCLATURE</u> | <u>DESCRIPTION</u>   | <u>MODIFICATION</u>  |
|---------------------|--|--|
| B. AN/TSQ-103       | Light Intercept Facility<br>(two intercept positions.)   | Replace receivers with digitally tuned, solid-state receivers, improve recorders, antennas, and internal switching capabilities. |
| C. AN/TSQ-68        | Translator/Transcriber Van<br>(two linguists/analyst positions.)   | Replace outmoded recorder and ancillary equipment.   |
| D. AN/MSQ-63        | Communication Control<br>(MAF/MAB DSSCS entry.)  | Increase baud rate, add duplex relay circuits, and change cryptographic equipment.   |
| E. AN/TSQ-88        | Light Signal Monitoring Facility (two intercept positions with limited multichannel voice and radio printer capability.) | Enhance multichannel voice and radio printer capability.   |

WHAT IS THE MARINE CORPS POSITION? The Marine Corps has a requirement to provide tactical SIGINT direct support at all echelons, battalion and above. In order to satisfy this requirement modifications to existing systems are essential to extend the service life of these systems until follow-on systems are fielded.

## SECTION VII LOGISTICS PROGRAMS

This section describes Marine Corps programs which are designed to provide MAGTF commanders with the necessary logistics support to carry out their assigned mission.

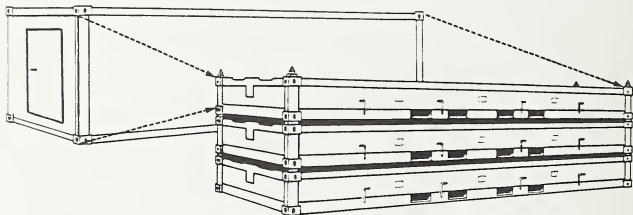
The most comprehensive of the programs is the Field Logistics System (FLS). The Marine Corps FLS is an integrated program which provides intensive life cycle management of selected combat service support equipment to assure success in logistically supportable amphibious operations, while exploiting the benefits of containerization. The system is designed around international dimensional standards in order to be able to use all modes of transportation, especially the container-capable merchant fleet. Major subsystems of FLS are shelters, containers, material handling equipment, i.e., utilities, medical, messing, maintenance, sanitation, and fuel and water equipment. The goals of the system are to reduce manpower, to lower equipment acquisition, logistics support costs, and shipping space requirements, and to decrease training needs while enhancing the effectiveness of the logistics support system and the readiness posture of Marine Corps amphibious forces.

In addition to FLS, the Marine Corps has other programs designed to improve the Marine Corps' capability to provide logistics support to the MAGTF commanders.

The logistics equipment addresses in this section are:

- Marine Corps Expeditionary Shelter System (MCESS)
- Intermediate Size Containers
- Heavy High Mobility Tactical Truck (5-Ton)
- High Mobility Multipurpose Wheeled Vehicle (HMMWV)
- Logistics Vehicle System
- Crash Fire Rescue Vehicle
- Medium Girder Bridge (MGB)
- Lightweight Amphibious Container Handler
- Fuel Distribution Systems
- Reverse Osmosis Water Purification Unit
- Stand Alone Water Supply System (SAWSS)

## MARINE CORPS EXPEDITIONARY SHELTER SYSTEM (MCESS)



**DESCRIPTION:** The MCESS consists of a standard family of size of ISO tactical shelters. Each of the shelters is constructed of panels consisting of parallel aluminum skins bonded to a paper honeycomb core. The shelters exist in the following sizes:

|               |                                       |
|---------------|---------------------------------------|
| 8' x 8' x 20' | General Purpose (Knockdown)           |
| 8' x 8' x 20' | General Purpose (Rigid)               |
| 8' x 8' x 20' | Electromagnetic Interference Shielded |
| 8' x 8' x 10' | Electromagnetic Interference Shielded |

**PROCUREMENT PROFILE:** FY83 FY84 FY85 FY86 FY87 FY88 FY89

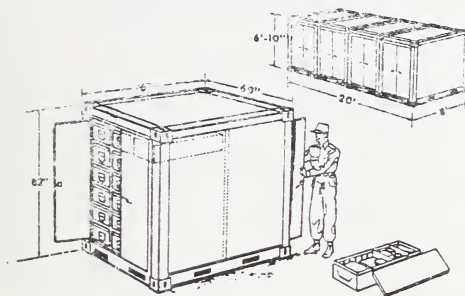
|     |   |     |     |     |     |     |     |
|-----|---|-----|-----|-----|-----|-----|-----|
| QTY | 0 | 912 | 563 | 842 | 695 | 351 | 130 |
|-----|---|-----|-----|-----|-----|-----|-----|

**WHY IS IT IMPORTANT?** The Marine Corps Expeditionary Shelter System (MCESS) is composed of a family of expeditionary tactical shelters, joining corridors, and complexing kits which provide environmental protection for designated functions in support of USMC operations worldwide. The family is composed of a group of shelters which can function in units of one or complexed together to serve any function desired or required. The shelters will provide maintenance and warehousing facilities primarily for combat service support organizations. They also can be used for medical, maintenance, and various service support functions.

**WHAT IS THE MARINE CORPS POSITION?** The Marine Corps supports the DOD standardization efforts to develop common shelters. MCESS has been approved by DOD.

**MANUFACTURER (Prototype):** Brunswick Corporation

INTERMEDIATE SIZE CONTAINERS  
(INSERTS, PALCONS, AND QUADCONS)



DESCRIPTION: Weatherproof, reusable prefabricated containers.

PROCUREMENT PROFILE:    FY83    FY84    FY85    FY86    FY87    FY88    FY89

|     |     |   |     |     |     |     |     |
|-----|-----|---|-----|-----|-----|-----|-----|
| QTY | 605 | 0 | 200 | 150 | 295 | 295 | 285 |
|-----|-----|---|-----|-----|-----|-----|-----|

WHY IS IT IMPORTANT? These containers will provide a weatherproof and secure storage and transport function for organizational property and consumable supplies. They are durable (10-year life expectancy) and can be arrayed to conform to international transport standards. Included in this container system is the fuel/ water storage module (SIXCON) which will be common to the Marine Corps water and fuel system. The containers are essential to the combat readiness of all Fleet Marine Force units.

WHAT IS THE MARINE CORPS POSITION? These containers substantially enhance the deployability of FMF units. They will eliminate the labor-intensive requirements currently driven by existing wooden mount-out boxes and pallets. Their addition to the Marine Corps inventory will decrease mount-out response time and lessen manpower considerations (now required for box fabrication and maintenance).

MANUFACTURER: Rohr Industries, Chula Vista, CA

M939 SERIES 5-TON TRUCK (PRODUCT IMPROVEMENT)



**DESCRIPTION:** The M939 series is a family of multipurpose 5-ton high mobility vehicles equipped with six-wheel drive. The M923 cargo version features removable side racks, troop seats, tarp bows, tarpaulin and flaps.

| <u>PROCUREMENT PROFILE:</u> | <u>FY82</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> | <u>FY88</u> | <u>FY89</u> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| QTY                         | 882         | 995         | 1032        | 739         | 627         | 71          | 0           | 0           |

**WHY IS IT IMPORTANT?** These 5-ton 6x6 trucks are a product improvement of a truck introduced into the Army in 1970. The Marine Corps did not acquire the older vehicle but maintained a fleet of 5-tons procured in the 1960 time frame. These vehicles have exceeded their life expectancy and require immediate replacement.

**WHAT IS THE MARINE CORPS POSITION?** Current inventory of operable vehicles is about 30 percent below inventory objective levels. The current fleet of 6x6 cargo trucks does not have the power to tow the M198 howitzer. These vehicles are required to maintain stated combat capabilities within the Fleet Marine Force.

**MANUFACTURER:** AM General

## HIGH MOBILITY MULTIPURPOSE WHEELED VEHICLE (HMMWV)



DESCRIPTION: HMMWV is a multipurpose 5/4-ton high mobility vehicle, equipped with 4-wheel drive, diesel engine, and automatic transmission. All HMMWVs have a common engine, chassis, and drive train and are adapted to special purpose roles with various kits and bodies. The three primary configurations are: TOW/Weapons Platform, Utility Vehicle and Ambulance.

| <u>PROCUREMENT PROFILE:</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> | <u>FY88</u> | <u>FY89</u> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| QTY                         | 1,013       | 2,976       | 3,123       | 4,793       | 0           | 0           | 0           |

WHY IS IT IMPORTANT? The HMMWV will be the primary tactical vehicle for combat and combat support units. Its primary functions will be troop and weapon transport, weapons platform, reconnaissance, fire support, medical evacuation, and command, control and communication applications. This vehicle will have a 5/4 ton capacity and will replace all current 1/4, 1/2, 3/4, and 5/4-ton trucks and 1/4-ton trailers.

WHAT IS THE MARINE CORPS POSITION? This vehicle satisfies an urgent requirement to replace current over-age vehicles and eliminate severe T/E and PWR deficiencies. Further, it will provide an improved anti-armor platform capability (TOW-missile). The acquisition of this vehicle is a top priority of the Marine Corps.

DEVELOPER: Contract award to AM General.

## LOGISTICS VEHICLE SYSTEM (LVS)



**DESCRIPTION:** Front powered unit and four rear units, eight wheel drive, diesel engine, auto transmission, articulated, 60" fording w/o kit, 26000 lbs. curb wt, 85 percent commercial parts.

| <u>PROCUREMENT PROFILE:</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> | <u>FY88</u> | <u>FY89</u> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| QTY                         | 129         | 148         | 354         | 360         | 419         | 0           | 0           |

**WHY IS IT IMPORTANT?** The Marine Corps Logistic Vehicle System (LVS) is a family of combat support vehicles designed to replace over-age, over-size, diverse, and T/E deficient items with a tractor and four interchangeable rear body units (container and cargo trailers, recovery trailer unit and fifth wheel). LVS is air-transportable and its dimensional standardization permits container ship transport. LVS design features provide enhanced cross-country mobility required to move weapons systems and provide logistics support for operating forces.

**WHAT IS THE MARINE CORPS POSITION?** This vehicle system must be procured to support the mobility requirements of the operating forces. Required operational capabilities cannot be maintained with current motor transport equipment.

**DEVELOPER:** OSHKOSH Truck Corporation



CRASH FIRE RESCUE VEHICLE (C/F/R)



DESCRIPTION: The Crash Fire Rescue vehicle is a four wheel, four wheel drive, 1000 gallon capacity, rear mounted diesel engine powered truck.

PROCUREMENT PROFILE: FY83 FY84 FY85 FY86 FY87 FY88 FY89

|     |    |    |    |   |   |   |   |
|-----|----|----|----|---|---|---|---|
| QTY | 21 | 12 | 18 | 6 | 0 | 0 | 0 |
|-----|----|----|----|---|---|---|---|

WHY IS IT IMPORTANT? The C/F/R vehicle provides mandatory safety requirements for passengers, crew, cargo, and aircraft arriving and departing from tactical and garrison airfields. This is a joint acquisition effort designed to reduce program costs and to provide these vehicles at the earliest possible time. This vehicle will fill T/E deficiencies and replace obsolete, overage assets.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps must procure this vehicle in order to properly support the full spectrum of flight operations (training, passenger/cargo, and tactical expeditionary operations).

DEVELOPER/MANUFACTURER: OSHKOSH Truck Company

### MEDIUM GIRDER BRIDGE (MGB)



*Figure 2. Medium Girder Bridge (MGB)*

DESCRIPTION: Lightweight, hand-erectable, easily transportable, and rapidly employable girder-type bridge constructed of welded aluminum alloy.

PROCUREMENT PROFILE: FY83 FY84 FY85 FY86 FY87 FY88 FY89

|     |    |   |   |   |    |   |   |
|-----|----|---|---|---|----|---|---|
| QTY | 23 | 8 | 0 | 4 | 10 | 5 | 0 |
|-----|----|---|---|---|----|---|---|

WHY IS IT IMPORTANT? Provides lightweight, easily transportable, two-girder deck bridge capable of supporting class 60 loads of wheeled or tracked vehicles across 100 foot spans or 162 foot spans when employed with link reinforcing set.

WHAT IS THE MARINE CORPS POSITION? MGB can be handled by four or six person teams. It requires no heavy equipment for erection, and can be stored and transported in ISO configured containers. Distinct advantages over existing bridges include reduction of transport requirement, reduction in construction time, reduced logistics support problems, and reduction in personnel required for erection.

MANUFACTURER: Fairey Engineering Ltd., UK

## LIGHTWEIGHT AMPHIBIOUS CONTAINER HANDLER (LACH)



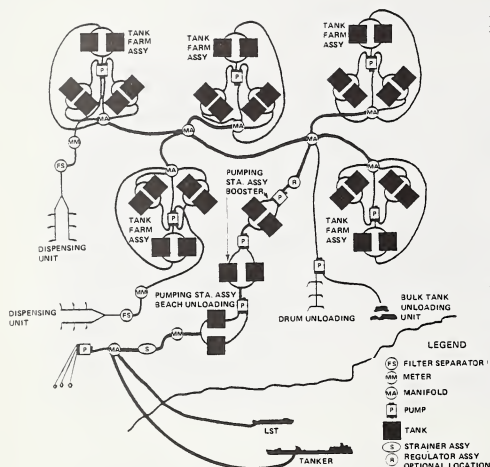
DESCRIPTION: The Lightweight Amphibious Container Handler (LACH) is a towed straddle-lift crane designed to be used at the surfline during amphibious operations.

WHY IS IT IMPORTANT? The LACH can be maneuvered through 5' surf from the beach into small landing craft to pick up 8'x 8'x 20' containers, weighing up to 44,800 lbs, and offload them onto logistics trailers for movement inland. The LACH can be used in place of or as a supplement to other shoreside container transfer systems and may also be employed at inland storage areas for routine container handling. The LACH will normally be used at any time that the Navy's elevated causeway is inoperative or when the input to the beach exceeds that of the elevated causeway.

WHAT IS THE MARINE CORPS POSITION? Marine Corps dependency upon the use of merchant shipping for the Assault Follow-on Echelon (AFOE) during amphibious operations and the dramatic changes of merchant ships from breakbulk to containerships have forced the Marine Corps to containerize a large percentage of the AFOE cargo. The LACH will provide a capability not presently available in the Marine Corps inventory.

MANUFACTURER: General Crane and Hoist

## FUEL DISTRIBUTION



**DESCRIPTION:** The fuel distribution system consists of Amphibious Assault Fuel System (AAFS), Tactical and Fuel Dispensing System (TAFDS), and Helicopter Expedient Refueling System (HERS). TAFDS provides a system capable of receiving, storing, and dispensing aviation fuel in tactical airfield operations. AAFS provides a system capable of receiving, transferring, and dispensing gasoline, diesel, or jet fuels from the high water mark of the amphibious beachhead to inland distribution points. HERS provides a helicopter transportable fuel dispensing system capable of refueling helicopters operating forward of established air facilities.

### PROCUREMENT PROFILE: FY83 FY84 FY85 FY86 FY87 FY88 FY89

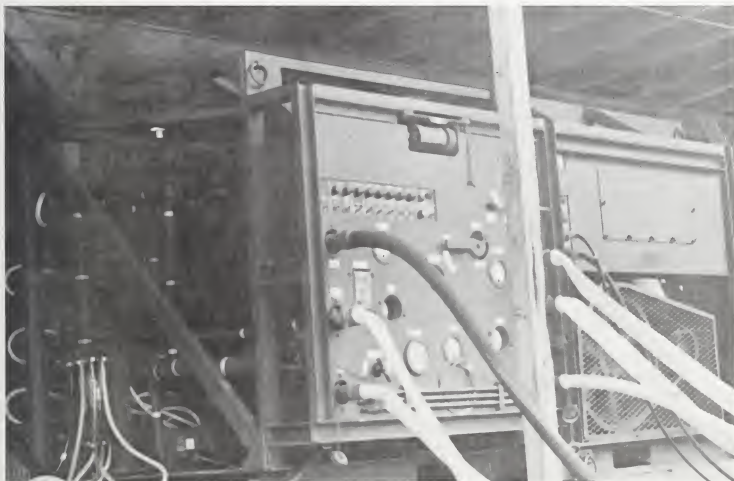
|        |    |   |    |    |   |   |   |
|--------|----|---|----|----|---|---|---|
| TAFDS  | 10 | 5 | 15 | 11 | - | - | - |
| QTY    |    |   |    |    |   |   |   |
| 8 AAFS | 8  | 4 | 8  | 12 | 9 | 4 | - |
| QTY    |    |   |    |    |   |   |   |
| HERS   | 6  | 8 | 15 | 13 | - | - | - |
| QTY    |    |   |    |    |   |   |   |

**WHY IS IT IMPORTANT?** Requirement exists to furnish 1,000,000 gallons per day of fuel in support of a Marine Amphibious Force in a combat situation. These systems are currently in the Marine Corps inventory.

**WHAT IS THE MARINE CORPS POSITION?** A series of research and development efforts are in progress or planned that will result in the introduction of improved components for the systems currently in use. Additional systems are required to support maritime prepositioning ships and to equip activated cadre companies both regular and reserve.

**DEVELOPER:** U. S. Marine Corps

600 GALLON REVERSE OSMOSIS WATER PURIFICATION UNIT (ROWPU)



DESCRIPTION: Self-contained unit ISO configuration in 8' x 8' x 10' shipping frame.

PROCUREMENT PROFILE:    FY83    FY84    FY85    FY86    FY87    FY88    FY89

| QTY | FY83 | FY84 | FY85 | FY86 | FY87 | FY88 | FY89 |
|-----|------|------|------|------|------|------|------|
|     | 116  | 0    | 100  | 102  | 102  | 100  | 0    |

WHY IS IT IMPORTANT? Designed to produce potable water for the Fleet Marine Force from fresh, brackish, and salt water sources. The unit has the ability to process NBC contaminants. The rate production is 600 gallons per hour, based on a 20 hour day. Production rate is a relationship to total dissolved solids content, temperature, PH, and pressure.

WHAT IS THE MARINE CORPS POSITION? This unit will replace four different types of water purification equipment currently in the Marine Corps inventory which have reached the end of their life expectancy.

DEVELOPER/MANUFACTURER: Univox of California (frame by Superior Industries). Designed by U. S. Army, MERADCOM, Fort Belvoir, VA.



## Section VIII

### U.S. NAVY PROGRAMS AND SUPPORT

This section is divided into two subsections. The first subsection contains a series of point papers and program summaries that focus on naval support requirements for amphibious power projection. The lead paper entitled "Sealift in Support of Power Projection by Naval Forces" gives an overview of the sealift required to support this nation's maritime strategy, and the concerted efforts of the Navy/Marine Corps Team to maximize the capability of our naval power projection forces. This paper is followed by papers on amphibious lift, MPS, strategic sealift, and shipbuilding programs.

The second subsection focuses on programs in the critical area of medical support for amphibious operations. Medical support programs are rapidly progressing. A \$20 Millions deficit for FMF medical outfitting was halved in FY82. That deficit will be fully overcome by the end of this fiscal year. Each MAF can now care for 20,000 casualties -- and state-of-the-art medical equipment has been added to the inventories. And, as the Marine Corps has validated its need for additional medical personnel, SECNAV has increased end strength to meet that need. Two hospital ships have been approved and that program's contract awards are on schedule. The first four Fleet Hospitals will be ready for deployment in March of 1985. And by 1990, we will have achieved our programming goal of 11,250 Fleet Hospital Beds, plus the 2000 beds provided by the two hospital ships.



## SEALIFT IN SUPPORT OF POWER PROJECTION BY NAVAL FORCES

The global interests of our nation depend on both the deterrence of aggression and the maintenance of an economic environment favorable to the peoples of the free world. In order to accomplish these objectives, free access to critical natural resources at their source remains paramount. The vast majority of free trade is conducted over the global sea lines of communications (SLOC). Given these imperatives, our National Command Authority is fully committed to a strategy based on maritime superiority.

Security of these vital SLOCs and defense of global interests and allies requires a potent force capable of timely and measured response anywhere in the world. Only the power projection forces of the Navy/Marine Corps Team are prepared to meet this full range of contingency requirements.

Naval power projection capabilities rest on three distinct but complementary elements of naval force. They are the Carrier Battle Group, Amphibious Forces and Marine Air-Ground Task Forces (MAGTFs). These elements, when taken together, provide the flexibility and mobility that is required to pursue this nation's maritime strategy.

Central to the employment of Naval Forces in the power projection role is the availability of sufficient sealift assets to accomplish the assigned mission. Presently, adequate sealift remains a major obstacle to the full exploitation of the power projection capabilities resident in our naval forces.

The Marine Corps with the full participation and cooperation of the Navy has, in the past year, made significant strides in concluding agreements and in planning for enhancement of our presently inadequate sealift posture. Indeed, the past year marks a watershed in Navy-Marine Corps efforts to marry lift requirements to the development of the Naval Ship Construction Plan.

Principle among the accomplishments of the past year was the completion of the DON Long-Term Amphibious Lift Requirement and Optimum Ship Mix Study which, for the first time, accurately determined our lift requirements for future years. The effect has been to establish a set of lift criteria by which the Navy can tailor its amphibious ship construction plan to meet our needs. The Commandant and the Chief of Naval Operations have consolidated this effort by signing an agreement which fixes the MAGTF Lift "Fingerprint" through the mid-'90s. As a result, the Navy and Marine Corps are able to present a united front in the development of strategic mobility initiatives.



The Navy/Marine Corps Team continues to pursue strategic mobility enhancement initiatives to both complement the current lift capability, and to increase our ability to respond to crises in the near-term. Although current amphibious lift assets remain inadequate, it is clear that the erosion of lift capability has been arrested, and that it is now being reversed. The attached point papers represent dramatic evidence of the enhanced power projection capabilities naval forces will possess in the years ahead.



## AMPHIBIOUS LIFT

While the Marine Corps does not fund for any portion of national strategic sealift assets, both its role as an expeditionary force and its unique contribution to the projection of power by naval forces causes it to not only monitor but also to positively influence the development of amphibious assault shipping requirements.

In order to fully support a maritime strategy, the Marine Corps must be able to simultaneously respond to multiple contingencies. In the long-term, such challenges can only be successfully met if the capability to simultaneously lift the Assault Echelons (AE) of two Marine Amphibious Forces (MAF's) and a Marine Amphibious Brigade (MAB) is provided. As an interim objective, the Navy and Marine Corps have identified the lift requirements and embarked upon a ship building program which will provide for the simultaneous lift of a MAF(AE) and MAB(AE) in separate oceans. This objective is being vigorously pursued to correct the existing lift capability shortfall, and to reinforce the unique forcible entry capabilities of this nation's Navy/Marine Corps Team.

Recognizing that the present amphibious lift is sufficient only to lift a MAF(AE), our interim lift objectives can only be achieved by the continuous construction of amphibious ships through the mid-'90s. Stabilized lift requirements and a firm Navy commitment to construction will enable us to attain our lift requirements.

## THE NTPF AND MPS PROGRAM

In response to the Defense Guidance, the Marine Corps has, in concert with the Navy, developed strategic mobility enhancement initiatives to meet near-term and long-term shortfalls in strategic lift. To meet nearer term shortfalls the Marine Corps has developed a program referred to as the Near-Term Prepositioning Force (NTPF). Long-term shortfalls are addressed by the Maritime Prepositioning Ships program (MPS). These initiatives are designed to substantially reduce strategic lift requirements and to improve the response time of credible, sustainable forces.

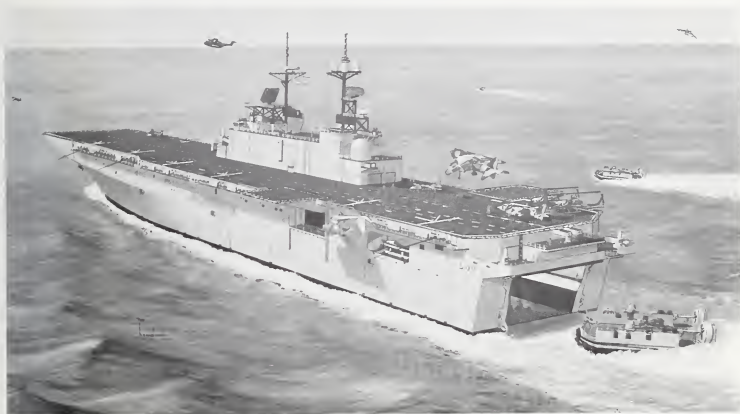
The NTPF program provides prepositioned equipment and supplies to outfit and sustain Marine forces for contingency use in support of USCENTCOM. Included in this prepositioning program are the logistics stores required to sustain the combat operations of a mechanized heavy MAGTF for 30 days. Limited munitions, POL, and water support are also available to Army/Air Force units.

Three MPS brigades will be formed using the afloat prepositioning concept developed and implemented for NTPF. The MPS program will provide a more substantial capability than NTPF to any CINCPAC on a regional or global basis. MPS will provide for rapid force build-up and reinforcement. Each of the three MPS flotillas will be comprised of four or five ships specially designed and chartered to meet requirements for self-sustained operations, spread loading, and the other unique characteristics required to support the force. It is important to note, that neither NTPF nor MPS provides a forcible entry capability. The concept for deployment of these forces requires an airfield in the vicinity of the offload site for a marriage of the fly-in echelon with the embarked equipment and supplies. NTPF and MPS brigades are well-suited for rapid employment missions. Employed independently, they offer a quick response and a credible, sustainable force.

In addition to the strategic sealift assets necessary to project the power of amphibious naval forces, a requirement exists to provide strategic sealift for follow-on forces required for their support and reinforcement. The assets available to meet this strategic sealift requirement are divided into two distinct subsets known as Fast Sealift and Sustaining Sealift.

The Fast Sealift program recognizes that a requirement exists to provide a "dash" capability to rapidly transport bulk supplies and equipment from CONUS to overseas objective areas, and to reinforce deployed forces until permanent strategic lines of communication are established. The Fast Sealift program provides for the acquisition and conversion of eight, high-speed, SL-7 ships to a RO/RO configuration. All conversions should be completed by the end of FY84.

Sustaining Sealift, to meet national strategic shipping requirements during periods of mobilization or national emergency, is critical to the conduct of a maritime strategy. The Military Sealift Command controls U. S. sealift assets during any mobilization or emergency. Sealift resources will be made available from the MSC controlled fleet, the U. S. Flag Merchant Marine, and the National Defense Reserve Fleet. Given the importance of sustaining sealift to the conduct of a maritime strategy, MSC has embarked upon a Sealift Readiness Enhancement program. This program is designed to augment the assets available to the U. S. Flag Merchant Marine. The MSC has identified some 120 commercial ships to be made available within 60 days of request for support. Additionally, certain vessels presently in the National Defense Reserve Fleet have been identified for upgrade and assignment to the Ready Reserve Fleet (RRF). To date, some 27 ships have been assigned to the RRF and will be available for use within ten days of recall.



### LHD - 1

DESCRIPTION: LHD-1 is a multipurpose amphibious assault ship. It will be equivalent in size to the current LHA.

| <u>PROCUREMENT PROFILE:</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> | <u>FY88</u> | <u>FY89</u> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| QTY                         | 1           | -----       | 1           | -----       | 1           | 1           |

WHY IS IT IMPORTANT? The LHD-1, a multipurpose amphibious assault ship, is needed to augment the LPH class helicopter assault ships (in the short term) and to replace this class in the future. The LHD-1 will significantly increase the total lift capability, provide a flight deck for both helicopters and VSTOL aircraft, and offer a well-deck for both air-cushion and conventional landing craft. In concept and design, the ship will be similar to the current LHA class, and it will be built using much of the same technology.

WHAT IS THE MARINE CORPS POSITION? The current level of 67 amphibious ships (including two AGF's) is inadequate to support the lift requirement for a MAF(AE) and a MAB(AE). Therefore, procurement of at least eight LHD-1 class ships is desired.



DESCRIPTION: LSD-41 is a wet well, two helo spot, conventionally powered amphibious assault ship. It will be 580 feet long and 84 feet in width. It will displace 15,774 tons, and will be diesel propelled.

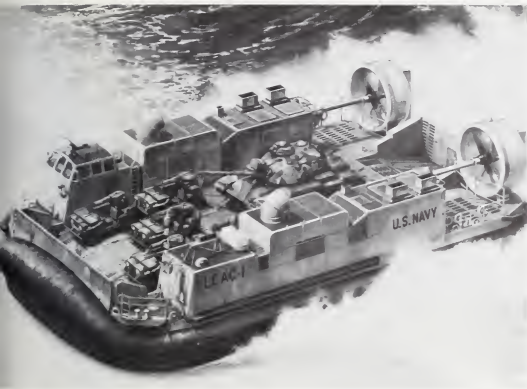
| <u>PROCUREMENT PROFILE:</u> | <u>FY82</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| QTY                         | 1           | 1           | 1           | 2           | 2           | 2           |

WHY IS IT IMPORTANT? In 1967 there were 162 active amphibious ships. Today there are 67 total - including both active and reserve ships. Between 1984 and 2002 all but five of these remaining amphibious ships will be retired due to service life age. Accordingly, procurement of new amphibious ships is critical to retention of an amphibious capability. Specifically the LSD-41 serves three purposes: as a first hedge against bloc obsolescence loss of amphibious ships between 1984 and 2002, as a replacement for loss of well deck capability lost with retirement of the eight LSD-28 class ships between 1984 and 1989; finally, it is optimized to transport and operate the new Landing Craft Air Cushion (LCAC) vehicle.

WHAT IS MARINE CORPS POSITION? The current mix of 67 amphibious ships is inadequate to support the national strategy. Therefore procurement of the LSD-41 class of ships to replace the capabilities lost with retirement of the LSD-28 class of ships and to provide additional lift for a MAF (AE) and a MAB (AE) is essential.

MANUFACTURER: Lockheed Shipbuilding and Construction Company, Seattle, WA.

## LCAC



DESCRIPTION: The Landing Craft Air Cushion (LCAC) vehicle is a shipborne, high speed (40 knots), over the beach, ship-to-shore amphibious landing vehicle capable of a 60 ton payload. It is designed to lift all equipment organic to the MAGTF in an amphibious operation.

The characteristics of an LCAC are as follows:

- Length -- 90 feet
- Weight -- 180 tons
- Speed -- excess of 40 knots
- Range/endurance -- 200 mi
- Beam -- 48 feet
- Cargo capacities
- 1800 sq. ft.
- 60 tons (75 ton overload)

| <u>PROCUREMENT PROFILE:</u> | <u>FY82</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> | <u>FY88</u> | <u>FY89</u> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Qty (Units)                 | 3           | 3           | 6           | 12          | 12          | 12          | 12          | 12          |

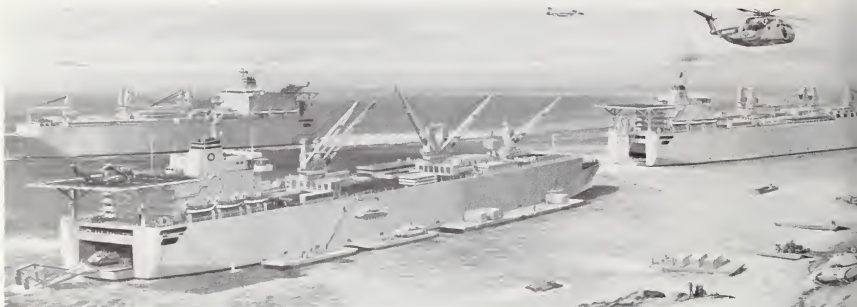
WHY IS IT IMPORTANT? Currently the Soviets have over 50 operational air cushion vehicles; about 100 are expected to be in their inventory by 1990. On the other hand, as noted in the latest introduction to "Jane's", the U.S. has consistently procrastinated in its procurement of this capability. This air cushion vehicle would replace current pre-WWII technology landing craft, scheduled for retirement in 1991, with modern technology landing craft that offer the following advantages over current landing craft:

- Expose 70 percent of the world's beaches, vice 17 percent to amphibious operations
- Travel in excess of 40 knots vice 9-11 knots
- Craft characteristics provide over-the-horizon launch capability and decrease vulnerability of the force
- Believed much more survivable in mine conditions
- Significantly increases build up rate ashore, thus increasing probability of assault success.

WHAT IS MARINE CORPS POSITION? Six LCAC are the minimum needed to provide an initial operational capability. Inasmuch as LCAC would introduce the most significant improvement to amphibious warfare since the introduction of the helicopter, LCAC procurement is strongly supported by the Marine Corps.

MANUFACTURER: Bell Aerospace-Textron, New Orleans, Louisiana





**DESCRIPTION:** The Maritime Prepositioning Ship (MPS), designated T-AKX, supports the MPS Program, a Department of Defense (DOD) strategic mobility enhancement initiative designed to speed the administrative introduction of credible forces into possible contingency areas around the world (see page III-2). The mission of the T-AKX will be to provide lift/area/volume capacity, maintenance facilities, and environmental preservation for a balanced portion of the equipment, vehicles, supplies, POL and potable water to support three Marine Amphibious Brigades (MABs). A total of 13 vessels will be procured consisting of a mix of 1/4 MAB and 1/5 MAB capable ships. These specially designed ships will be produced by a combination of conversion of existing roll-on/roll-off ships and newly constructed vessels.

| <u>LEASING PROFILE:</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> | <u>FY88</u> | <u>FY89</u> |
|-------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Ships (Qty)             | -           | 3           | 8           | 2           | -           | -           | -           |

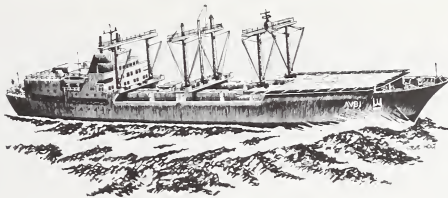
**WHY IS IT IMPORTANT?** The MPS program is designed to enhance the ability of the Navy and Marine Corps to provide the National Command Authorities with a wide range of rapidly deployable deterrent options, each with its own discreet signal and its own credible, fully integrated combat capability. In view of the significance of the program to a viable Southwest Asia strategy, achievement of the deployment capability for the programmed MAGTFs in accordance with the current Defense Guidance is essential.

**WHAT IS THE MARINE CORPS POSITION?** The Marine Corps supports the Maritime PrePositioning concept and the specially designed commercial ships necessary to make it a reality. Concern for the nation's ability to move forces rapidly has been central in Marine Corps planning to reach the crisis area expeditiously, ready, and equipped for the mission. MPS provides the Navy and Marine Corps a capability to respond to crisis situations around the world where forcible entry is not required, but when time is of the essence.

**DEVELOPER/MANUFACTURER:**

|                        |   |
|------------------------|---|
| General Dynamics       | - 5 Ships (New Construction, 1/4 MAB capable) |
| Waterman Steamship Co. | - 3 Ships (Conversion, 1/4 MAB capable)       |
| Maersk Lines, LTD.     | - 5 Ships (Conversion, 1/5 MAB capable)       |





DESCRIPTION: The Aviation Logistics Support Ship (T-AVB) provides sealift for movement of an aviation Intermediate Maintenance Activity (IMA) to support the deployment/employment of the Aviation Combat Element (ACE) of a MAGTF during contingency situations. The T-AVB supports the MPS deployment concept. A Marine Corps IMA housed primarily in mobile vans is embarked in the T-AVB and brought up to a partially functional status while enroute to a contingency area. Some vans and support materials for the IMA as well as selected ground support equipment will be carried in deep storage to the objective area. Upon arrival, in the objective area the IMA and all supporting material will be phased ashore to ensure continuity of support for the Marine Aviation Combat Element.

The T-AVB program involves the modification of two government owned combination RO/RO and self-sustaining containerships currently retained in the Ready Reserve Force. Provisions will be made in the modification to embark 183 functional shop and supply vans, 80 accessible spare part stowage vans, plus 37 other vans with non-shipboard functioning items, i.e., shoreside van connection units, etc., and 300 maintenance and support personnel to activate and operate the IMA during transit and in the objective area until the operation can be phased ashore.

The RO/RO ship will be modified only to the extent required to support the partial activation of the IMA in transit and will be fully capable of returning to a resupply role when the IMA has been offloaded and the ship released by the operational commander.

| <u>PROCUREMENT PROFILE:</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> | <u>FY88</u> | <u>FY89</u> |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Ships (Qty)                 | -           | -           | 1           | 1           | -           | -           | -           |

WHY IS IT IMPORTANT? Achievement of full combat capability by the Aviation Combat Element of the MPS MAB requires the rapid in-theater establishment of a functional IMA to perform aircraft maintenance. Because of the scarcity of strategic airlift assets to lift the IMA facilities when required, as well as the need for them to be functional on arrival, a sealift capability providing enroute and in-theater aircraft maintenance support above the organizational level is required.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps supports the T-AVB concept. It accommodates traditional support of the deployed ACE, enhances operational flexibility, and retains all critical aircraft support assets with its operating forces.

## ADEQUACY OF NAVAL SURFACE FIRE SUPPORT

Naval surface fire support (NSFS) is essential for the conduct of amphibious operations, not only for shore bombardment but also for protection of the Amphibious Task Force. NSFS provides the responsive, all-weather, long-range, high-lethality, fire support to destroy hardened point or area targets prior to artillery coming ashore.

The requirement exists for both large and medium caliber guns. Current naval gunfire is inadequate due to a paucity of major caliber guns and the decreasing gun population. The Navy's position on future naval gunfire developments appears to be a "wait and see" posture. Development of the new 8" Major Caliber Lightweight Gun (MCLWG) was cancelled in FY80. Development of the 155mm Vertical Load Gun (VLG) was not approved due to the high initial costs of developing, fielding, and supporting a new naval gun. Total reliance, therefore, is placed on the dwindling numbers of existing 5" guns and the 16" guns on the reactivated battleships. In 1970 there were 900 naval guns in the fleet; in 1998, only 401 naval guns will be present. A new 5" guided projectile (GP) being procured which promises single hit accuracy. This weapon will make up some of the lost ground in the gun shortfall, but it cannot replace the need for a large caliber gun.

The Marine Corps is aggressively presenting NSFS requirements including the requirement for sufficient NSFS ammunition to the Navy. The Marine Corps supports the programmed reactivation of all four IOWA Class Battleships as an immediate step toward satisfying the large caliber gun requirement. Development of improved 16" ammunition (ICM) is also advocated. The Marine Corps also supports development of a large caliber gun system in the mid-term to improve the range capability of the fleet, and consideration of shipboard rocket systems and platforms as the primary battery on new construction ships.



## MEDICAL SUPPORT

The timely provision of adequate wartime medical support to the Fleet Marine Force requires a wide range of expeditionary medical facilities. These facilities must be maintained at a high level of readiness in terms of trained manpower and logistics preparations. As a force in readiness, the FMF's mission to respond to global contingencies dictates that medical support facilities must be strategically mobile and capable of rapid expansion with MAGTF growth. Medical support assets should be sufficient overall to support three active MAFs while retaining the capability to be sized and packaged for employment with task organized MAGTFs. The structure of medical support must include rapidly deployable afloat facilities capable of providing support immediately upon arrival in the AOA.

The following subsection provides an overview of FMF medical support requirements and descriptions of program actions in the critical area of expeditionary medical care.

THE NAVY CONTINUUM OF CARE  
A THEATER CONCEPT OF OPERATIONS

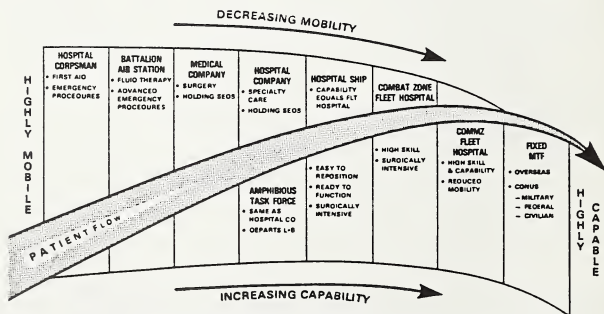
Theater combat casualty care for the Navy/Marine Corps team requires establishing a continuum of care (figure 1) that extends from the forward edge of the battle area (FEBA) to CONUS, and includes all or portions of the following medical assets:

Marine Corps

Company Aid Man  
Battalion Aid Station  
Medical Battalion  
-- H&S Company  
-- Five medical companies  
-- One hospital company

Navy

Casualty Receiving and Treatment Ship  
-- LHAs, LPHs  
Hospital Ships  
Fleet Hospitals, Overseas Hospitals  
CONUS Hospitals  
-- Navy and other service hospitals  
-- Veterans Administration hospitals  
-- Civilian-Military Contingency Hospital System (CMCHS)



Theatre Medical Continuum of Care  
Figure: 1

Upon injury or onset of disease, casualties are first seen by hospital corpsmen in the field, and then referred to the Battalion Aid Station (BAS) for resuscitation/stabilization and transferred to a Medical Company by ground vehicle. Casualties whose wounds make them non-transportable will receive surgical care in the Hospital Company to the rear. At the Hospital Company, additional specialized care is provided. Depending on the evacuation policy and patient loads, the patient is then transferred to a Hospital Ship, Combat Zone Fleet Hospital, or out of the combat zone to a Communication Zone Fleet Hospital or overseas medical treatment facility.

In the Communication Zone, the casualty is treated in a Communication Zone Fleet Hospital or overseas medical treatment facility staffed and equipped for definitive care. The mission of these hospitals is the rehabilitation of casualties to duty status; or, if rehabilitations cannot be accomplished within the evacuation policy, these casualties are transported to CONUS.

Transportation from one Deployable Medical System (DMS) to another in the Combat Zone is assumed to be by ambulance, and from the Combat Zone to the Communication Zone and beyond to AIREVAC. It must be realized that helicopters for patient transport may not be available within the Combat Zone. The size and capabilities within the Combat Zone may permit tactical air evacuation (figure 2).

Distribution of patients outside the Marine organic medical units (Medical Company and Hospital Company) will be controlled by the Joint Medical Regulation Office. Medical regulation within the Marine Corps will be done in the Medical Battalion of the Marine Corps Force Service Support Group located in the Combat Zone.

## CONCEPT OF MEDICAL SUPPORT CASUALTY FLOW PATTERN

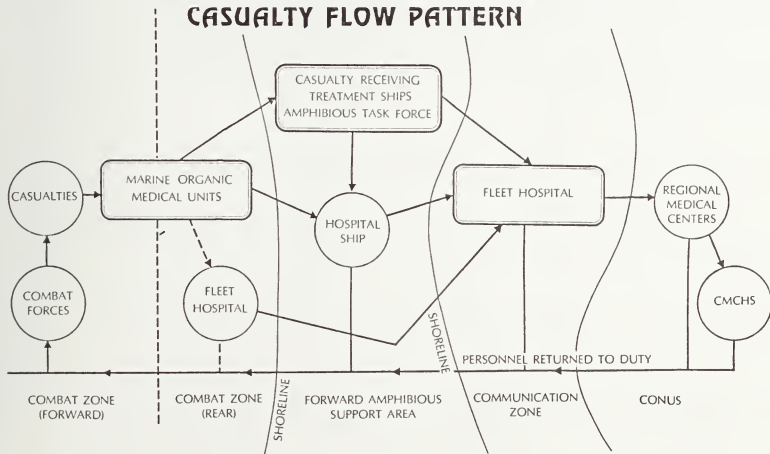
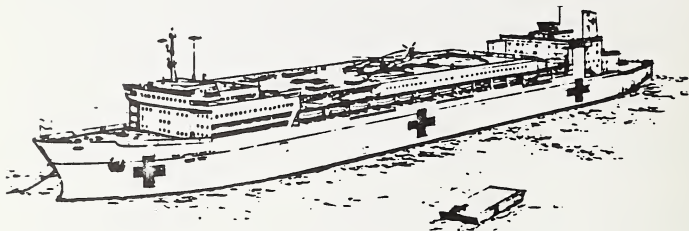


Figure 2

HOSPITAL SHIPS TO SUPPORT CONTINGENCY OPERATIONS



**DESCRIPTION:** Solicitations to the U. S. maritime industry were promulgated in the form of Request for Proposals (RFP) on 2 September 1981. The RFP requested submission of technical proposals which would offer various approaches to providing the Navy with an afloat medical capability (Definitive Care Facility) with an aggregate of 24 operating rooms and 2,000 beds. The ship(s) would be either new construction or conversion of existing hulls. Technical proposals were received from industry on 1 February 1982.

Upon completion of review of the technical proposals, awards for contract design for the conversion and purchase of the hospital ship capability were completed on 6 July 1982 with two competing companies.

- PRUDENTIAL LINES, INC., 2 ship conversion, LASH Barge Carriers, 12 operating room/1,000 bed capability per ship. Conversion shipyard: Maryland Shipbuilding and Drydock.

- APEX MARINE CORP., 2 ship conversion, San Clemente class tankers, 12 operating room/1,000 beds capability per ship. Conversion shipyard: National Steel and Shipbuilding Co.

On 29 June 1983 the Department of the Navy awarded a contract to APEX Marine Corp./National Steel and Shipbuilding Co. of California to convert one tanker into a hospital ship with an option for a second ship conversion.

Conversion is in progress and delivery of the first ship is projected for October 1986. If the contract option is exercised, delivery of the second ship is projected for July 1987.

Following delivery, the concept for employment during peacetime is:

- The ships will be maintained in a reduced operating status, with the ability to mobilize all civilian operating personnel, all key medical personnel plus necessary support, and a 30-day supply of consumables within five days. Secondly, the hospital ships

could provide full hospital service assets available for use by other U. S. Government agencies involved in support of disaster relief operations on a worldwide basis.

| <u>PROCUREMENT PROFILE:</u> | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> |
|-----------------------------|-------------|-------------|-------------|
|-----------------------------|-------------|-------------|-------------|

|       |   |   |   |
|-------|---|---|---|
| Ships | 1 | 1 | - |
|-------|---|---|---|

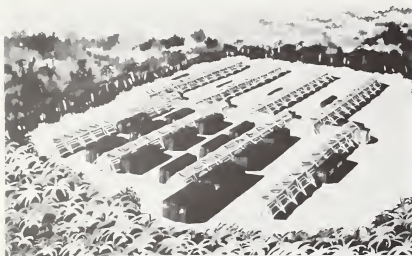
WHY IS IT IMPORTANT? A hospital ship capability is required to support a Marine Amphibious Force (MAF) amphibious assault. During the initial stages of the amphibious assault, neither the organic medical assets of the Medical Battalion, nor the medical support provided by the Navy can be effectively established ashore to receive and adequately treat initial combat casualties. These facilities require a large, relatively secure area and sufficient time to phase ashore and establish operations. The medical facilities aboard our combatant ships, although adequate in quality, are simply incapable of handling large numbers of combat casualties.

Only the hospital ship can provide the timely initial surgical capacity required by amphibious forces. The requirement for a hospital ship capability has been recognized explicitly by CINCLANT, CINCPAC, CINCUSNAVEUR, and CINCENT.

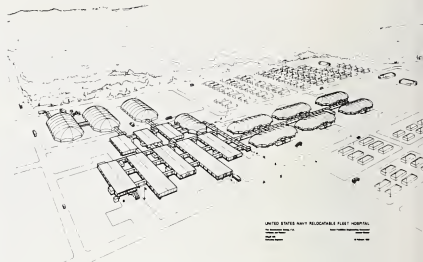
WHAT IS THE MARINE CORPS POSITION? The Marine Corps strongly supports the TAH and Fleet Hospital programs.



# NAVY FLEET HOSPITALS



Combat Zone



Communications Zone

DESCRIPTION: Fleet Hospitals are modular, rapidly erectable, relocatable medical facilities for treatment of both Navy and Marine Corps wounded. This Navy Program provides both Combat Zone (CBTZ) and Communication Zone (COMMZ) facilities of varying sizes for a balance of mobility, flexibility, and levels of care. Fleet Hospitals will receive patients from amphibious task force ships, directly from medical units organic to Marine forces, and from hospital ships. Fleet Hospitals can be staged in CONUS or prepositioned either afloat or overseas in advance of hostilities. The total program calls for 19 hospitals. The first 1,500 beds (two 500-bed and two 250-bed Combat Zone Hospitals) will be bought in FY 83 and available for use in FY 85. Program requirements are tied to force levels--the number of MAFs and battle groups which the Marine Corps and Navy can actually field.

## PROCUREMENT PROFILE:

| <u>FY83</u>        | <u>FY84</u>         | <u>FY85</u>           | <u>FY86</u>           | <u>FY87</u>           | <u>FY88</u>           |
|--------------------|---------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| (2)CBTZ<br>250 bed | (2)CBTZ<br>500 bed  | (1)CBTZ<br>500 bed    | (1)COMMZ<br>500 bed   | (1)COMMZ<br>500 bed   | (1)COMMZ<br>500 bed   |
| (2)CBTZ<br>500 bed | (1)COMMZ<br>500 bed | (1)COMMZ<br>500 bed   | (2)COMMZ<br>1,000 bed | (1)COMMZ<br>1,000 bed | (1)COMMZ<br>1,000 bed |
|                    |                     | (1)COMMZ<br>1,000 bed |                       | (1)CBTZ<br>500 bed    |                       |
|                    |                     |                       |                       | (1)CBTZ<br>250 bed    |                       |
| (4) 1,500<br>beds  | (3) 1,500<br>beds   | (3) 2,000<br>beds     | (3) 2,500<br>beds     | (4) 2,250<br>beds     | (2) 1,500<br>beds     |

TOTAL 11,250 BEDS

WHY IS IT IMPORTANT?: Fleet Hospitals will provide rapid treatment in-theater to save lives, reduce morbidity and maximize returns to duty.

WHAT IS THE MARINE CORPS POSITION?: Rapidly deployable Fleet Hospitals, like hospital ships and medical battalions, are an integral part of the Naval theater medical support structure and continuum of care. All elements of this continuum of combat care are necessary to sustain Navy and Marine combat operations.



## ADVANCED BASE FUNCTIONAL COMPONENTS (ABFC)

DESCRIPTION: ABFCs can provide additional shore based medical and dental support, available to the FMF, in or adjacent to the beach-head. It must be emphasized that ABFCs are not pre-assembled and held in stock for immediate issue. Use of ABFCs requires allowance of sufficient lead time for funding, procurement, assembly, training and transportation. Medical/dental ABFCs are listed in Figure 3.

WHY IS IT IMPORTANT? A medical or dental ABFC is a grouping of materiel and personnel designed to provide support to an advanced base, to augment existing facilities, or to add capabilities that otherwise were not available.

|      |   |         |
|------|---|---------|
| M1E  | Fleet Hospital (Communication Zone)                                 | 500 Bed |
| M2E  | Fleet Hospital (Combat Zone)  | 500 Bed |
| M3E  | Fleet Hospital (Combat Zone)  | 250 Bed |
| M4E  | Station Hospital (Expeditionary)                                    | 100 Bed |
| M5E  | Clinic (Expeditionary)  | 25 Bed  |
| M6E  | Clinic (Expeditionary) First Aid/Outpatient                         |         |
| M8E  | Hospital - 60 Bed Mobile (Tents) (Capable of Helo lift or Fly-away) |         |
| M9E  | Surgical Suite Supplement (Expeditionary)                           |         |
| M10E | Casualty Receiving Unit (Expeditionary)                             |         |
| M11E | Blood Bank (Liquid) (Expeditionary)                                 |         |
| M12E | Whole Blood (Liquid) (Expeditionary)                                |         |
| M13E | Preventive Medicine Unit (Expeditionary)                            |         |
| M14E | Ophthalmic Service Unit (Expeditionary)                             |         |
| M15E | Dispensary 10 Bed, Mobile   |         |
| M16E | Casualty Staging Unit (Expeditionary)                               |         |
| M17E | Dental Component Mobile   |         |
| M18E | Dental Prosthetic Component, Mobile                                 |         |
| M20E | Dental Clinic, Small (Expeditionary)                                |         |



## SECTION IX

### TRAINING

In October of 1981 the Commandant established a separate Training Department of the Headquarters Staff to provide more effective management of Marine Corps training as a total system. The Training Department is chartered to develop policies and programs for the training and education of Regular and Reserve Marines. This responsibility includes:

- Management and direction of training programs and initiatives.
- The analysis, design, development, and publication of individual and collective training standards for all categories of training conducted in Marine Corps units and institutions.
- Marginal analysis of training resources to achieve maximum effectiveness and efficiency of training in the context of missions and standards.

The Marine Corps has adopted a training system based on the successful completion of established training standards - both individual and collective.

The implementation of this system requires that our training program continue to be performance and mission oriented, realistic and innovative. This section presents five issues of importance to the development of the Marine Corps training program in 1983.

DESCRIPTION: Instructional System Development (ISD) is a process used to develop, implement, and evaluate training. The ISD process analyzes training requirements, translates these requirements into training standards, selects the proper training strategy, develops effective training delivery systems, and provides quality control. It is a systematic but flexible tool that insures Marines get the knowledge and skills needed to accomplish the mission. The goal of the process is to get the most out of resources invested in training by improving performance on the job and/or decreasing the amount of the investment. The Commandant of the Marine Corps has directed that ISD be used for the development of all training in the Marine Corps. The tremendous volume of data to be collected, stored, manipulated, and analyzed in the ISD process cannot be handled manually in a timely or cost effective manner. For this reason, automated tools, such as computer-assisted ISD (CAISD), must be developed.

| <u>FUNDING PROFILE:</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> |
|-------------------------|-------------|-------------|-------------|
| <u>(\$000)</u>          | <u>80</u>   | <u>515</u>  | <u>250</u>  |

WHY IS IT IMPORTANT?

CAISD will facilitate the collection of data from Marines in the field. It will:

- assist in the analysis of this data telling which tasks are performed, by whom, where, the relative time spent in performance, the task difficulty, the training emphasis and the commonality of tasks among MOSs and type units.
- prioritize the tasks based on specified criteria.
- recommend instructional settings based on cost data and task priority.
- facilitate the drafting and publishing of training standards by providing multiple formats and ease of update.
- assist in the determination of instructional strategy such as media selection and the sequence of learning.
- evaluate student mastery at the training site as well as student effectiveness in the field.

Through automation, trends can be identified and tracked and optimal solutions can be sought.

WHAT IS THE MARINE CORPS POSITION? CAISD will be developed for implementation at HQMC.

DEVELOPER/MANUFACTURER: Contract has been awarded to VEDA Corporation Orlando, FL to conduct a feasibility study and economic analysis. Design phase is projected to start during June FY84.

## TRAINING REQUIREMENTS AND RESOURCE MANAGEMENT SYSTEM

**DESCRIPTION:** The Training Requirements and Resource Management System (TRRMS) will be the primary training information management system in the Marine Corps. TRRMS will consist of a centralized training information data base that will provide critical data analysis so that training requirements can be correlated with training resources. TRRMS will provide better projections of training requirements and improve reporting capabilities to OSD, OMB, Congress, and other government agencies. TRRMS will be utilized at the HQMC level.

|                         |             |             |             |
|-------------------------|-------------|-------------|-------------|
| <u>FUNDING PROFILE:</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> |
| \$ (000)                | 16          | 110         | 270         |

**WHY IS IT IMPORTANT?** TRRMS will provide HQMC managers with ready access to accurate and timely data which will result in improved manning of operational forces, and improved retention in the career force. TRRMS will reduce the shortfalls in trained personnel due to inefficient use of the available training resources. The reduction of unfilled school seats will result in a more balanced MOS structure. The decision making process will improve as this detailed information is made available to the decision makers.

**WHAT IS THE MARINE CORPS POSITION?** TRRMS will be developed for implementation at HQMC.

**DEVELOPER/MANUFACTURER:** The Management Information Instructional Systems Activity (MIISA) under the control of the Chief of Naval Education and Training (CNET) is conducting a feasibility study and economic analysis. The design phase is projected to start Sep FY84.

## GUIDE FOR UNIT TRAINING MANAGEMENT

DESCRIPTION: The Guide for Unit Training Management will fill a Marine Corps training void. At present, there is no single document which provides guidance to the FMF unit trainer or the training manager. The proposed guide will be a plain language handbook that will provide individuals who lack training experience with a logical training program. The guide will reflect the systems approach to training, and will incorporate the best elements of Marine Corps, as well as other service, training concepts.

WHY IS IT IMPORTANT? Given personnel turbulence and training responsibilities that extend down to the junior NCO levels, a training guide becomes essential. Such a guide, while basic, provides the total picture. In the absence of a cohesive document, the inexperienced trainer lacks perspective and is continually responding to the next training crisis on the horizon without a plan for meeting the total training requirement.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps is in the process of developing a unit training management guide.

DEVELOPER/MANUFACTURER: The Naval Training and Education Command is developing a first draft guide to be field-tested at all FMF and non-FMF commands in Oct FY84.

## INSTRUCTIONAL MANAGEMENT SYSTEM

DESCRIPTION: The Instructional Management System (IMS) is a new system that represents a major enhancement in training management throughout the Marine Corps formal school system. IMS, will provide the formal school with the capability of tracking and monitoring student progress and performance; scheduling and management of training resources (equipment, classrooms, instructors, etc.); creation and update of Programs of Instruction (POI's), lesson plan and other course materials; and development of test materials and analysis of test results. IMS will also provide word processing equipment for Marine Corps formal schools. IMS will enable the CG, MCDEC to efficiently supervise and evaluate courses of instruction and enhance control over thirty individual schools. At the HQMC level, IMS will result in more efficient training management.

| <u>FUNDING PROFILE:</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> |
|-------------------------|-------------|-------------|-------------|
| (\$000)                 | 962         | 762         | 1115        |

WHY IS IT IMPORTANT? The Instructional Management System (IMS) will enhance instructor productivity in the formal schools. IMS will enable student throughput increases without a corresponding increase in direct overhead support, and will reduce the time spent in the labor-intensive paperwork of schoolhouse administrative functions. IMS will result in a more efficient utilization of available training resources at the formal schools and will improve training management throughout the Marine Corps.

A prototype system is projected to be fielded in June FY84 at Camp Lejeune, NC for field testing at Field Medical School, Infantry Training School, Engineer School and all Service Support Schools, (SNCO Academy, Instructional Management School, Food Service School, Supply School and Motor Transport School).

WHAT IS THE MARINE CORPS POSITION? Procurement of the Instructional Management System will take place in FY86. A phased implementation will begin in FY87 with the initial site activations.

## MANUAL WAR GAMES

DESCRIPTION: This acquisition program will provide for the phased production, and distribution of up to five separate war games to Fleet Marine Force battalions and squadrons, appropriate formal schools, and selected reserve units. Spare kits will be distributed to all Training and Audiovisual Support Centers (TAVSC's). The games are designed to be self-contained, flexible, and portable. They require only a short preparation time, and they are adaptable to either garrison or field environments. The games are designed to exercise the decision making process of unit commanders and their staffs, from squad to MAF level.

| <u>ACQUISITION PROFILE:</u>             | <u>FY83</u> | <u>FY84</u> | <u>FY85</u> | <u>FY86</u> | <u>FY87</u> |
|---|-------------|-------------|-------------|-------------|-------------|
| (units)                                 |             |             |             |             |             |
| TACWAR (Co level)                       | 140         |             |             |             |             |
| TACWAR (Co level w/<br>advanced module) |             | 60          | 107         |             | 107         |
| STEEL THRUST (Bn level)                 |             | 50          |             |             |             |
| STEEL THRUST (MAU level)                |             |             | 40          |             |             |
| Landing Force (MAB/MAF<br>level)        |             |             | 40          |             | 30          |
| Occupational Specialty                  |             | 50          | 200         | 200         | 200         |

WHY IS IT IMPORTANT? Each game represents a simplified model of a real battlefield, and provides improvements in learning and applying command and staff functions. The games are comparatively inexpensive to produce, provide realistic combat situations, and will augment existing training methods.

WHAT IS THE MARINE CORPS POSITION? Procure the manual war games in accordance with the above profile.



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Concepts and issues

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